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

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THE INTRODUCTORY LECTURE,

Delivered Nov. 20, 1833,

BY

WILLIAM PERCIVALL, M.R.C.S., & V.S.,

AT THE UNIVERSITY OF LONDON.

GENTLEMEN,

IN consequence of the lamented ill-health of your excellent instructor, and my estimable friend, Mr. Youatt, you behold me before you this evening as his willing, but, I fear (as the sequel may prove), his imperfect representative. Hardly a month ago I had no more idea of being called to such an honour, than any one who now hears me may have entertained. But the Council of this Institution having expressed their unwillingness that these Lectures should be discontinued, even for a single course, and suggested to the Lecturer the expediency of his providing himself, during his indisposition, with a substitute, Mr. Youatt has been induced (I presume in the spirit of friendship) to call on me. And since, gentlemen, I have answered that call, all I can say is, that I must do my best in the execution of the trust which my friend has done me the honour to repose in me; at least, to the extent that my own health, which has for some considerable time past been but indifferent, will permit me to exert myself.

VETERINARY SCIENCE, gentlemen, may be taken in its fullest sense to mean *medical zoology*. Though, for many reasons, we have selected the HORSE as the *principal* object of our study; yet is there no animal—no quadruped, at least—that can be said to stand without the pale of its investigations. Such as are called *domestic animals*, it is true, form the ordinary subjects of our care: this, however, arises simply from the circumstance of their coming so frequently under our notice, and not from any prescribed limits set to the science itself.

The pre-eminent station the horse occupies among other domestic quadrupeds, he owes to the variety of ways in which he contributes to our profits as well as to our pleasures, and to the

consequent pecuniary worth he has, and most deservedly, attained. While he tills our land, and has hitherto formed our almost only means of land-transport; he fights our battles; runs our races; transports us in the chase; and either carries us upon his back, or draws us about in our carriages, from place to place, at once with pleasure, speed, and safety. Such, gentlemen, being the leading qualifications of an animal which in this, beyond all other countries in the world, has flourished and improved, and grown to a value almost incredible, it may not be either uninteresting or out of place cursorily to inquire how, or by what means, he has been brought to such great perfection amongst us, above all other nations.

That Britain owes little or nothing for its present horses to any indigenous breed it might have possessed, seems pretty certain, not only from the silence of our historians on that subject in particular, but from the circumstance of the many recorded importations of horses, and excellent ones of their kind, our country has had, at sundry times, from various parts of the continent; and from countries which at those times as much surpassed us in this particular as we of the present age do any and all of them. The only original breed history warrants our laying any claim to, seems to be the Welch pony, or some such rude production—an animal, though very useful in its way, as far different from and inferior to the generality of our present stock as it is possible for two animals of the same class to be. Indeed, we have arrived at such perfection in our present native breeds, that not only do we surpass all other nations in each and every one of them respectively, but appear in most of them to have produced specimens which have really no fellows or likes in any part of the world. The English race-horse derives his blood or characteristic breeding from the Arabian; and yet so improved an animal is he become, that, while he retains almost all the corporeal beauty of his progenitor, he outshines him in every qualification that can render him, as a racer, valuable or useful. As for the English cart-horse, it appears probable that he is, or rather originally was, an importation from Normandy or Flanders; but so far have we transcended our neighbours, even in the cart and carriage breeds, that the state coach of their own sovereign (the King of the French) is now drawn by English horses.

The bare mention of this universally acknowledged superiority in our horses, naturally creates in the mind a desire to learn by what means, or in what way, it has been acquired. That we are not indebted to our own original country or indigenous stock for it, appears pretty evident not only from the accounts we have of them, but from the comparatively recent date of some of our

present most valued breeds. Nor can we be said to be altogether indebted to other countries for it; since we are, at present, in possession of a race of horses no where to be met with but in Great Britain. We first derived the parent stem from abroad, it is true; but we have so improved the fruit—the produce thereof—that, not only are the parental characters in a great measure unredeemable, but the virtues or qualities of the progenitor are surpassed beyond all calculation in the offspring. This is an acknowledged truth; and a truth of that description that richly deserves investigation. It therefore becomes a question, and a very interesting one, to what our present justly vaunted breed of horses is owing?—since we do not deign to acknowledge either continental importation or original native production as the sole or even the most influential causes of these phenomena.

There are three circumstances in particular by which the kinds or characters of animals, passing from one generation to another, appear to be influenced;—*climate*, *soil*, and *breed*: let us, in the most cursory manner, inquire how far they seem to have been operative in the production of the British horse.

That *climate* of itself has worked such wonders, no one, I imagine, would for a moment believe; and especially when he becomes informed that the best horses out of our country, Arabians, Barbs, &c., are found in climates much hotter than our own, whose variable temperature, and sudden and constant vicissitude of weather, one would surely think, must be any thing but conducive to birth and beauty in the animal form. Is not France a much more even and congenial climate than England? one that brings forth all sorts of vegetable productions, in the natural world, to much greater perfection than ours does? And yet, its animals—its horses, bear no sort of comparison with ours. How is this? Surely, we cannot ascribe our superiority to *climate!*

Is it, then, the *soil?* That soil must have considerable influence, there cannot be a doubt. On the nature of the soil depends the quality of the pasture; and on the quality of the pasture will depend its property of nourishing and invigorating the animal body. The science of agriculture has enriched Britain with her choicest fruits: the feed of horses and of cattle has been brought to the very highest state of perfection, and even contending against more or less ungenial influence of climate. This is a fact that cannot be denied; and it is one of very great weight with us on the present occasion.

How far soil, considered without any reference to climate, will serve to account for the provincial characteristics of our horses

and cattle, I will not pretend to say: certain it is, that one county produces one description of horse, while another county or district brings forth something possessing differences, which, though not general or important, are sufficient to enable us to say in most cases where each animal has been bred and brought up.

The grand first cause, however, in all these changes—that by the steady prosecution and scientific management of which, they have been with such success brought about—appears to me to be *breeding;* by which I do not only mean the procuration of original stock of good description, but the continual progressive cultivation of that stock in the progeny, by the greatest care in rearing and feeding it, and the nicest selection from amongst it of individuals best qualified for future procreation. I believe a great deal more depends upon this last circumstance than upon the original characters or attributes of the parents.

Ab origine, there could have been but one single breed or kind: climate and soil have, doubtlessly, had their influences in multiplying and varying the produce; but I believe that we are, beyond every thing else, indebted to what I would call, *culture in breeding.* We have progressed from good to better—step by step, losing sight of no subsidiary help—until we have attained, as I said before, a perfection in horse-flesh unknown in the whole world besides.

A question which seems naturally to follow the one we have just been examining, is, What has led to all this pains-taking in Britain in regard to her breed of horses? The natives must have had some constant stimulus to have kept so much on the alert on this domestic production in particular. Why, yes! The stimulus has been the *high prices* horses have brought in the market, and especially those of blood and strength; to attain which perfections, either separate or combined, according to the purpose for which the animal was designed, has ever been the consummation of the breeder. And what has led to such high prices for horses? In particular, the national sports of *racing* and *hunting,* which have created a sort of native, indigenous pride in an Englishman, to be possessed of a good horse. The prices we of the present day are in the habit of paying for our horses, even in our own country where they are bred and brought up, are to a foreigner all but incredible: from one to five thousand pounds sterling are paid for a race-horse; from one to five hundred for a hunter; and as much as half these latter sums for good hackneys and carriage-horses. A standard of value, gentlemen, which we cannot regard but with the highest degree of inward satisfaction; since, were once the prices of horses to grow low, one might reasonably quake for the practitioners of veterinary medicine. For,

after all that may be said on the score of humanity (and I trust that neither our employers nor ourselves are deficient in any such feeling), the *price* of horses it is that will do the most for veterinary science.

Having said thus much, gentlemen, on the chief object of veterinary science, the HORSE, I shall now enter on some observations touching the science itself. The veterinary art is but of comparatively modern introduction into this country—one that, fifty years ago, was in the hands of a set of men who, from their want of education and the mechanical nature of their occupation, were unfitted for any thing that required science or art, save the handicraft which they practised at the anvil, of making horseshoes and nailing them upon the feet. Like the barber-surgeons of old, from the circumstance of their operative services being required, and so frequently in one way, on the body, they were called (there being either a total want or great paucity of medical practitioners) to exercise an art of which they possessed no other knowledge than such traditionary lore as might have been handed down to them by their forefathers. In such hands as these, it was not to be expected that our art could thrive—that it ever could sufficiently develope its utility and importance, to assert those claims on society in general, to which, I trust, every year we advance in the present age is adding some fresh ones.

Such was the barbarous or, at least, uncultivated state of the veterinary art at the time that St. Bel, a French gentleman from the veterinary school at Lyons, arrived in this country. He it was that prompted the first effort to redeem our art from the abyss of ignorance and superstition into which it had long and lowly fallen, and once more to set it on those pedestals of science upon which it had already rested, during the ages of the Greeks and Romans. Such a strong hold, however, had these descendants of Vulcan got of the art (or, rather, so unknown and undervalued were the advantages it held out to produce in skilful or qualified hands), that when St. Bel arrived in this country, in 1788, and made public proposals to teach an improved practice of it on the principles of science, his offers met with no encouragement, and he was compelled to retrace his steps to France. Undaunted, however, by this one unsuccessful attempt, he made another visit to England, two years afterwards; and this turned out a fortunate one. For, on this occasion, an agricultural society, the ODIHAM, a proof of their good sense and very much to their credit, gave ear to what Monsieur St. Bel had to propose; and finally resolved themselves into a body, called the Veterinary College of London, with a view to the erection of a

public school, over which St. Bel was to preside. That St. Bel was a man who possessed some considerable store of medical knowledge, I believe all who knew him will admit: at the same time, every one who stood beside him at the time he was at the College, and who themselves had any knowledge of veterinary matters, are agreed that, so far as a *veterinary* professor was wanted, he was not, to the degree that might have been expected or desired, qualified to undertake such an office. However, he held it but a very short time: hardly was the erection of the present college at St. Pancras (which was intended but as temporary and preliminary to something better) completed, when St. Bel died, leaving the art in but little better condition than that in which he had found it.

Among one of the first operations that was performed by St. Bel, at the College, was the excision of two redundant or accessory feet (in a case of *lusus naturæ)*, which grew from the fetlocks of the two fore legs. He operated on one leg at a time. In the first operation, which he performed with considerable anxiety, from the apprehension of the superfluous growth communicating with the fetlock joint, he was assisted by the renowned John Hunter, who, on seeing him remove the part without providing any flap of integument to cover the wound afterwards, advised him, the next time he operated, to make a provision of the sort. The consequence of which friendly and useful hint was, that the parts healed in half the time after the second operation that they did after the first. That St. Bel, however, had he lived, would have placed the art upon a scientific basis, may be augured from a passage which I shall here read to you, out of a very commendable work he has left us, entitled, "Observations on the Art of Veterinary Medicine." The passage runs as follows:—"The object of this art is therefore not only congenial with that of human medicine, but the very same paths which lead to a knowledge of the diseases of man, lead equally to those of brutes. An accurate examination of the interior parts of their bodies; a studious survey of the arrangement, structure, form, connexion, use, and relation of these parts, and of the laws by which they are intended to act; as also of the nature and property of the various foods, and other agents, which the earth so liberally provides for their support and cure: these form, in a great measure, the sound and sure foundation of *all* medical science, whatever living individual animal is the subject of our consideration." This, gentlemen, is sound and wholesome doctrine, and such as could not have failed to have set our art upon a sure and firm basis: whatever, therefore, may be said of the deficiencies of St. Bel in practical matters, his name must ever stand

high in veterinary history, not only from the circumstance of his having been the *Founder of the Art* in this country, but from his having left behind him a series of observations (with a plan, grounded upon them, for the education of students) which, even at the present day, are perused with admiration.

The veterinary art, gentlemen, as a science or object of study, has two main supports:—on the one hand, it is supported by a knowledge of medicine; on the other, by a knowledge of that animal, in particular, on which medicine is to be practised.

A knowledge of *medicine*, in the fullest sense of the word, will not only comprise general anatomy, physiology, and pathology, but likewise chemistry and botany, and other useful collateral branches of science; while a knowledge of the animal himself will demonstrate the particular application of all this medical information, at the same time that it serves to distinguish medical practitioners of one denomination from those of another. What I mean by *general* anatomy, gentlemen, is, that sort of anatomical knowledge which applies to the *animal creation in general*, or, at least, to the more perfected departments or orders of it. A general knowledge of *bones*, and *joints*, and *muscles*, and *bloodvessels*, and *nerves*, will serve as well for a horse as for a man; and for a dog or a hog, as well as either. It is of little consequence which of these animals we take as our standard or model of perfection: each one, in its way, is as perfect as the other; and if one exhibit more complication in one respect than another, we shall find those that evince in some other particular still further complexity of structure. There will always, however, be this advantage attending an acquaintance with the anatomy and physiology of *many* animals; viz. that we shall find them reciprocally and beautifully illustrative one of another, and especially when we come to the study of *physiology*: a science which teaches us the uses and operations of parts of which anatomy has shewn us the composition and structure; and which consists of a set of laws or first principles equally as applicable to one animal as they are to another.

The third link in the chain of medical acquirements is *pathology*, or a knowledge of those changes the body sustains from disease; the general laws of which are likewise equally applicable to all animals, though, wherever structure and function vary, in course this must vary. That which is different in a state of health will be different in a state of disease. Thus far, then, will a knowledge of what I would call *general medicine* assist us. Let me now explain what is meant to be understood by a knowledge of the animal himself.

Having possessed ourselves of the rudiments—the first or

general principles of medicine (to which end all medical lectures, and instruction, of whatever kind, will, one way or other, tend), our next duty is to select the animal that is to be the object of our study, in order that we may apply these principles to it. We must make ourselves acquainted with the peculiarities in its anatomy; with the peculiarities in its physiology; and with those of its pathology: at the same time we must inquire into its *natural history;* into its *habits,* natural and domestic; and into every *influential circumstance* under which we may be viewing it.

Now, gentlemen, with a view of shedding some additional light on what I have been laying down, as, in my opinion, the true groundwork of veterinary science, I shall bring before you (purely, as I said before, for the sake of elucidation) the often discussed cases of the surgeon and the farrier or groom as being respectively qualified for veterinary practice. From what I have just been saying, it will be evident enough to you, that both are, from certain important deficiencies, highly disqualified: let us, however, for the sake of comparison and elucidation, examine into their respective disqualifications. The surgeon walks into the domicile of the sick horse with all the self-confidence justly created in the mind by a conscious proficiency in medicine; and finding that the symptoms are such as to indicate considerable inflammatory action with disturbance of respiration, he orders that the animal be bled and purged and blistered: but judging from the seeming comparative powers of his own patient, he directs that five or six pounds of blood should be taken away; some sulphate of magnesia or soda in infusion of digitalis be given; and that some blister plaster be applied to the side. Now, the *principle* of this practice is, in itself, good: the error, all the way through, has lain in not being acquainted with the *peculiarities* of his new patient. Instead of drawing five or six pints, he should have abstracted ten or twelve; instead of giving purgative medicine (which to a horse with such a disorder is dangerous), he should have exhibited sedatives alone; and his blisters should have been many times stronger than such as he would find it necessary to employ in his own practice. All which has arisen simply from a want of knowledge of the peculiarities of the animal on which he was practising; a knowledge which to him is at all times of most easy attainment.

In the case of such a man as a groom or a farrier being called to attend a sick horse, well acquainted as he may be, and probably is, as to what the animal will bear in regard to bleeding and purging, and other ordinary operations, yet ignorant as he must be of any of the science of medicine itself, he cannot but run (even

supposing him to be a man versed in practice) continual danger of doing harm, and thus thwarting any good he may effect. However prosperously he may conduct all ordinary cases, yet the moment any thing turns up in practice out of the common course of events, will he be reduced to the dilemma of seeking advice elsewhere, or (rather than do that) sacrifice the animal's life to his own ignorance and self-conceitedness.

From these observations, then, gentlemen, it appears that, in order to become good and efficient veterinarians, we must possess ourselves of much of the surgeon's knowledge, as well as of that of the farrier, the groom, and the horseman: in other words, we must make ourselves acquainted with the science of medicine, and upon that knowledge engraft all that relates to the animal on which it is our intention to put it into practice. Our art is no more to be learned at the anvil than the practice of human surgery is to be learnt in a barber's shop. Its groundwork is set in science; and he who would practise it with any advantage to the public or credit to himself, must beforehand possess himself of that science.

In reference to medicine, gentlemen, you will have to make yourselves acquainted with the *anatomy* of the horse. You will have to dissect and examine every part of his body, in order that you may see for yourselves the different *materials* of which it is composed; how those materials are cemented together to form distinct parts or *textures;* how those textures are united to form parts still more complicated, which we call *organs;* and how all these textures and organs are connected together into one whole—one entire and perfect body. Your success, gentlemen, in this branch of your studies, will rather depend on a patient and zealous prosecution of them than on any mental exertion: though, I will take upon myself to say, that you will find anatomy, when properly conducted, by no means to be that *dry work* which it is too often represented to be. An animal body may be said to represent a machine of the most perfect and beautiful construction, with not only powers within itself of unremitting operation, but with the means of self-repair, should any part of the machinery get out of order. Every part and organ is so admirably contrived and adapted to its end, that it seems difficult to select any one in particular by way of illustration: there is, however, in the horse one structure more especially, which while it lays claims upon us in practice greater than any other, yet evinces beauties in its anatomy and physiology hardly to be surpassed throughout the animal creation. I allude to THE FOOT OF THE HORSE. To the mind of any ordinary observer, the hoof, perhaps, suggests nothing beyond a sort

of natural shoe or covering and defence for the sensitive parts of the foot; and in truth this is one intention of it. But the man who is unacquainted with its internal mechanism, supposes also (and naturally enough) that the sole of the foot, like the sole of his own boot or shoe, bears the weight of the animal. What will be his astonishment when I tell him that, instead of the burthen being received upon the sole, it is borne by what he might call the *upper-leather*—a part we have named the *wall* of the hoof, from the circumstance of its running round and inclosing all the other parts.

If we examine the interior of the wall, we shall find that it is *laminated*—that is, that it has attached to (or rather growing from) its surface 500 longitudinal plates of horn, and that these are for the purpose of receiving in the intervals between them 500 correspondent plates of organic or sensitive structure, and that in this manner the body of the animal is, as it were, slung or suspended from the walls of the four hoofs; and to prove that this is the case, the soles have been removed from the feet altogether—have been what is called *drawn*—and yet the sensitive foot has not come to the ground—not fallen through the hoof, but remained suspended within it: indeed, as far as the support of the weight was concerned, every thing remained just as secure as though the soles had not been removed. Here, gentlemen, is a simple fact—simple now, because it is known—but one, simple as it is, that a man might work all his lifetime in a blacksmith's shop without discovering; and be in the end in the situation of the tradesman turned gentleman, in Molière's play, who, on learning for the first time English grammar rather late in his days, found he had been speaking prose all his life without knowing it. The surgeon even, with all his medical knowledge, would be as little prepared to meet with this fact as the blacksmith, or any other person: he would naturally say, that he expected to find *laminæ*, because such a structure exists in the human nail; but he would never have dreamt that such a function as the support of the animal was performed by them.

To proceed, gentlemen, one step further with this interesting part of our subject:—the beautiful structure we have just been examining not only supports the weight of the animal, but answers another purpose, scarcely less important; and one without which the former would not only prove of much less avail, but could not in safety go on at all. Not merely suspended is the weight, but the suspensory apparatus is itself *elastic*—yields and retracts—so that every time the horse, in going, puts his foot upon the ground, the suspending substance gives—elongates—and thereby breaks the force of the shock, warding off

concussion and all its injurious consequences. On the other hand, the instant the foot is raised off the ground again, the apparatus contracts, and thus becomes prepared for another descent: so that, in point of fact, a horse may be said to be moving in four *spring boxes*, or *foot-cases*, within which his feet are actually slung or suspended by their uppermost surfaces. Were this not the case, the foot bones—*coffin bones* as they are called—would be, from the great weight of the animal's body and the impetus created in action, literally smashed to pieces at every step.

These facts, gentlemen, will serve to convince you of the indispensableness of *anatomy*, and its concomitant *physiology*: by the one we discovered the existence, arrangement, and structure of the laminated apparatus we have been discoursing on; while the other has made us acquainted with the uses or functions that apparatus performs.

Before we quit the subjects of anatomy and physiology, let us take one other part by way of further illustration; at the same time that it becomes one more instance to shew how all-sufficient and admirable every structure we examine turns out to be. We will now take the EYE.—We will suppose that a bit of dirt, or a hay-seed, or some other extraneous matter, has flown into a horse's eye. How is the animal to get it out? He possesses no hands for the purpose; nor can his companions assist him in any way. What then is to be done? The dirt must not remain in the eye; if it does, inflammation will follow the pain and irritation it occasions, and the animal will lose his eye. What can he do? By his own *will*, nothing; or worse than nothing:—he may fruitlessly rub his eye against the manger, which in course would augment the evil.

All-provident Nature foresaw the inconvenience and annoyances that the animal must inevitably, in this respect, be subject to, and therefore had the precaution to furnish his eye with a contrivance no less beautiful than effectual. It consists, gentlemen, in what is called the *haw*—a part that is often seen projecting from the inner corner of the eye. It is a part made of gristle; and so shaped as exactly to fit the front or sight of the eye, as completely, and much in the same manner, that one side of the outer case of a watch fits the inner. Now, whenever any extraneous matter gets into the eye, the first thing that happens is the closure of the lids; which instantaneous shutting of the eye is followed by a flow of tears, and the simultaneous protrusion of this gristly body over the forepart of the eye; the effect of which is to disengage the extraneous matter from the sight, and lodge it upon its own back or exterior, from which it

is readily washed off by the tears, and thus discharged out of the eye altogether.

These curious facts and phenomena, gentlemen (to which might be added, taking the whole animal creation, others almost *ad infinitum)*, are the results of investigations in anatomy and physiology: to every one they are interesting, even on the score of their philosophical beauty; to us they are not only equally interesting in that sense, but become "part and parcel" of our professional knowledge.

The ultimate object we have in view, in learning the anatomy and physiology of an animal, is, that we may be able to discover and understand the nature of its diseases; and with this knowledge devise such means as are best adapted for their cure. This comprehends the *pathology* of the animal. We find the structure of a part in a state of health together with the functions it performs to be of such a description; and whenever we behold any deviation from these, we say the part is in a state of disease. For example, we know that the eye should appear transparent: consequently, should it look muddy or opaque, we say it has become diseased. We know the pupil—what is commonly called, the *apple* of the eye—should have a French grey or whitish blue sort of aspect: should it appear otherwise, we suspect disease to be present. The signs and appearances of health are, in a measure, peculiar to every animal of its kind; so that we, who are in the habit of attending medically to one animal in particular, may often be deceived when we come to give our opinion of others. Generally speaking, when a surgeon comes to look at a horse's eye, even though in perfect health, he suspects the animal to have a *cataract*. This is an opinion that has more than onee been expressed by some of the most celebrated oculists of this town; arising from the circumstance of the pupil of the horse's eye having a white or hazy sort of blueness which does not exist in the human eye. This shews, gentlemen, how dangerous it is to draw comparisons between one animal and another. For, notwithstanding that one set of *general* principles must direct us all, we shall find their application different in each individual species. What do you think, gentlemen, of a surgeon writing a work—and really, in every respect but one, a very clever work—and giving an account of the "diseases of the *gall-bladder* of the horse;" when, unfortunately for all his literary labour, at least in *that* department, the animal never had such a thing as a gall-bladder!

Everybody has heard of a *corn* in a horse's foot; as different a thing, gentlemen, from corns in our feet as light is from darkness. It is, however, a very simple disease; though, simple

as it is, it compels us to seek assistance, both from anatomy and physiology, before we can understand its nature. The *sole* of the horse's foot (though, as I told you before, it does not bear the weight) sinks down or descends, in consequence of the elongation of the elastic apparatus (which I also spoke of before); consequently, whenever any thing is opposed to the horny sole that prevents this descent of it, the sensitive sole becomes bruised, much in the same manner as one of our nails would if struck with a hammer. The consequence of this injury is, that blood is extravasated underneath the horny sole, and soaks through into the pores of it, staining it of that red hue which every common groom or blacksmith knows indicates the *existence* of corn; though they are, in course, totally unable to *account* for it.

With a view, however, to the detection and thorough understanding of disease, we must extend our knowledge farther than comes within the immediate precincts of medicine. We must make ourselves well acquainted with the natural and domestic habits of the animal; with his external conformation; with his action; with his powers, &c.:—knowledge such as this will enable us to detect disease in its earliest and most obscure forms, and to make those nice pathological distinctions which are so necessary to a scientific and efficacious practice.

There is a branch, gentlemen, of the veterinary art, which, as far as practice or even profit is concerned, is, perhaps, so little eligible, as to be rather rejected than desired; and yet is one so intimately connected with the welfare of the foot in health, and the production and removal of disease in it, as to be a link quite inseparable from the veterinarian's chain. However simple the art of shoeing horses, as commonly practised, may appear to be, and however mechanical it, in a great measure, in fact is, still, gentlemen, the paring of the hoof, and the adaptation and nailing of the proper sort of shoe, are operations that can only (in many cases even in health, and in all in disease) go properly on under the immediate eye of a veterinary surgeon. The foot is an organ doubly important to us: important to us, from being the organ of support and progression; and important to us, from being one so liable to disorder, in consequence of the defence it requires at the hands of art. It was a common saying with the farriers of old—"no foot, no horse;" and one of our medical examiners, in the course of a speech he made at one of the veterinary anniversary dinners, took occasion to laud us and our art so far, as to tell us we were the means of gaining the battle of Waterloo; which he explained as follows:—"The British cavalry," said he, "everybody knows, achieved wonders; and

had it not been that the feet of the horses were well shod, and free from disease, how could they have acted as they did?"

Though, in the cure of disease, we possess some advantages over surgeons, there is a disadvantage in comparison with them, and a heavy one it is, under which we labour in veterinary practice. If a surgeon attends a man for a bad compound fracture, and he recovers the limb sufficiently to enable his patient to walk about with a crutch, under all the circumstances of the case he obtains, and deservedly, great commendation: but if a veterinary surgeon, in a case of lameness (no matter from what cause, or how grievous a one), cannot restore his patient to *soundness*, he does little or nothing: not only not daring to ask for any praise, although probably he may richly deserve much; but more likely incurring the censure of his employer because he has not done, what?—why, worked impossibilities! A man makes a very useful member of society with a wooden leg. But who would keep a horse with a wooden leg? I know a cavalry officer of the British army who lost a limb, high up in the thigh, in the Peninsula, and who fought his way afterwards at Waterloo with a cork leg! But how would he have fought if his horse, as well as himself, had had a cork leg?

Again, gentlemen, supposing a man to have a disease in his eye—a *cataract* we will say; a disease for which the surgeon possesses no medicinal remedy, no more than ourselves. He is compelled to remove the lens (the diseased part) by operation, after which, though his patient is blind without optical aid, he enables him, by the use of spectacles, to recover very serviceable vision. But who would like to trust to a *horse* in spectacles? Though the operation were practicable (which, by-the-by, it can hardly be said to be), yet would there be required such nicety in the adaptation of particular glasses to the sight, as well as in keeping them on, and clean and bright, that all this would prove an effectual barrier to their employment. Added to which, even suppose they *could* be worn with any effect, many horses would shy so with them, that they would prove far safer animals for use in a state of total blindness, than with such imperfect or dubious vision.

Although, gentlemen, the preceding observations have been made chiefly in reference to the horse, yet I should not be doing my duty in this chair, were I not to impress upon your minds the almost equal claims other domestic, and, indeed, *all* animals have upon us. The faithful dog, who, on all occasions, attaches himself to his master, no less by his sagacity and fidelity than by his truly valuable qualifications; the patient sheep, doomed to die to supply us with food and clothing; the ox, equally

serviceable, alive or dead; nay, even the swine itself, must not be disregarded. All, gentlemen, have claims upon us; and though the horse, from his being an especial favourite with his lord and master, and in particular from his comparatively great individual worth, demands our chief consideration, yet are the others, taken in the aggregate, a mass of national wealth which will well repay any pains we may take to include them in our investigations.

A great deal, gentlemen, has been said on the score of *importance* or *respectability* of the veterinary profession. Its utility however has, of late years, been so generally felt and acknowledged, that one would think the importance of the *art* could no longer be doubted; and as for the respectability and importance of its practitioners, that must at all times, and in all situations, more depend upon themselves than upon their calling. Considering the few years that have passed over our heads since we all wore leather aprons; and considering the great opposition the profession has met with from those who continue to wear leather aprons, and from some (to their discredit) who wear the garbs of men of science and gentlemen; and considering the many other disadvantages under which the art—rising once again like the phœnix from its ashes—has had to struggle with, I think we cannot feel altogether so dissatisfied with the places we at present occupy among professions and callings in general. In the army, the profession has for many years been placed upon the most respectable footing: the veterinary surgeon now holds a king's commission, which itself entitles the holder to every privilege enjoyed by an "officer and gentleman;" and it is his own fault if he does not avail himself to the full of such an honourable endowment. In the French army this is not the case: in their service, veterinary surgeons rank but with quarter-masters, who, themselves, are not commissioned: the consequence is, that they are excluded both from the officers' mess-table and from their association. Were this the case in our army, the service would never have reaped those benefits from veterinary science which, gentlemen, I dare affirm army characters will be found on all occasions most ready to acknowledge.

At one time, glanders, farcy, grease, canker, &c. so infested our cavalry horses, that, year after year, numbers of them were lost to the country: now-a-days, however, some of these diseases are unknown,—never seen in regiments; while others make their appearance so rarely, as to give us hopes that, in the course of time, they may disappear likewise.

The strongest opposition the profession has met with (and one the current of which runs still forcibly against us), is the *turf*—

as the racing people, collectively, are denominated. So obstinate and bigotted were these people, that, some years ago, they would let neither a veterinary surgeon nor a puff of pure air into their stables. Affairs, however, are taking a turn even with them. They are beginning to discover that racers do better breathing pure than foul air; and will, sooner or later, find out that we know more about diseases and lamenesses than they do themselves.

I cannot, gentlemen, let slip this opportunity of proclaiming, with a degree of exultation, that the Institution in which we are now seated has set an example to all other British Universities, in being the first to introduce veterinary lectures within their walls; a boon that will not fail to be recorded by the profession, and one which (I think I feel myself warranted in adding), considering into whose hands those lectures have fallen, the Council have had no room to regret. When the connexion of veterinary science with general medicine—with the pleasures and habits and pursuits of the superior classes of society—with the interests of agriculture, and even the well-being of our country—come to be better understood than they are at present;—when the veterinary art shall be taught and cultivated with advantages equivalent to those under which medicine has so rapidly progressed, and more encouragement shall be given to its improvement; then, but not till then, will those who practise it, assert claims on society, and assume an importance, superior to any hitherto known to the profession. The University of London has taken a step towards such desired amelioration: let us hope that other institutions will follow its patriotic and praiseworthy example.

To the Editors of "The Veterinarian."

ON THE COMMENCEMENT OF A NEW YEAR.

By PAUL PRY.

"TIME rolls his ceaseless car;" and before this page shall have been opened, the year 1833, that was ushered in gilded by the New Series of your publication, will have set in darkness. But, before proceeding to its brief epitaph, I here beg leave to wish you, most kind and generous Editors (for I am led to understand that it is rather a losing than a profitable publication), a right happy, pleasant, and merry new year.

May you and the readers of THE VETERINARIAN, during the course of its 365 days, shed no tears but those of joy; heave no sighs, but those that may be averted by your Christmas bills; and may you remain as free from trouble and disappointment as veterinary surgeons can possibly expect in this sublunary world!

May you have few idle hopes, as idly cherished, to remember; few airy structures of imagination, raised but to crush you by their fall, to recollect; and, above all, may you be entirely free from the pang occasioned by a perseverance in the path of error, after your better feeling and judgment had warned you to withdraw, whilst culpable vanity and the shame of retracting led you, perhaps, to the very brink of dishonour, merely to avoid its semblance! And few there are, even of the best of us, who will find such scrutiny vain and unprofitable.

"Vain was the man, and weak as vain,
Who said, were he ordain'd to run
His long career of life again,
He would do all that he had done."

But, to return to the year that has just been added to the mighty and countless mass of unreturning time: taken as a mere period of twelve calendar months, it has seen some benefits accrue to the veterinary profession; on the other hand, it has also witnessed the contrast so amusingly displayed between the actions and professions of some professional characters, as well as between their merits and pretensions. It has seen the pretender strut about in full and unblushing effrontery, killing and curing the poor animals that may have been unfortunate enough to be submitted to his skill *secundum artem*, as fortune favoured his treatment. It has also seen folly and ignorance triumphant and prosperous, whilst worth and talent were kept in the background.

But I beg your pardon for trespassing thus long on your time, or, what is of more consequence to you, space in THE VETERINARIAN. I am, gentlemen, a well wisher to your publication, and, what is still better, occasionally a correspondent. It grieves me much at the evident decrease of your contributors; I hope, however, that the spirited letter of Mr. Allinson will be of some service in rousing the writing powers of our veterinary brethren. For myself, I promise you for the year 1834 a few papers, entitled "*Reminiscences of my College Life*," and, like other papers of its kind, the author will remain unknown. If you approve of them, give them a space in THE VETERINARIAN; if not, burn them. I promise to send you nothing that can be considered as libellous, or that can injure yourselves or any other person.

Should any of the idlers who have leisure to waste on trifles, instead of writing for your publication, attempt to pry into so unimportant a secret as the name of the individual whose humble task it will be to fill a few pages of the only publication that can be considered as our proper field, their ingenuity will be exercised in vain.

I know that some of your readers are of opinion that "reminiscences" are nothing better than old almanacks; and so, indeed, they are to some: but as old almanacks will serve as guides to him whose far-seeing eye knows how to trace the brilliant course of the heavenly bodies through their "wilds of empyreal blue," in like manner will recollections of by-gone days enable the man of thought and reflection to trace the progress of human events, knowing from previous data the direction in which human passions will impel the earthy bodies of little men.

By your insertion of this in your next VETERINARIAN, I shall be encouraged to proceed.

ON THE CHARACTER OF "THE VETERINARIAN," ON THE SUPPOSED CURES OF GLANDERS, AND ON MR. VINES' WRITINGS ON THOSE SUBJECTS.

By Mr. W. C. SPOONER, *V.S., Winchester.*

THE arrival of the December number of THE VETERINARIAN reminds us that another year is about to expire—that another volume has been completed. Well, Messieurs Editors, I congratulate you, that your favourite at six years old still stands sound, and that its performances continue to give general satisfaction. On a minute examination, I can discover no "*alteration in structure* or *impairment of function*;" I therefore cannot refuse to certify that I perceive no signs of unsoundness whatever. But has it reached perfection?—By no means: although free from blemish and without vice—although the health is good, and there is no occasion for physic, there is still a capability of carrying more good flesh; and its friends may be assured that it only needs a larger supply of veterinary food to push it still farther and farther in the career of improvement and utility.

And is it now a twelvemonth since one of its best contributors was hurried to the tomb?—to the tomb I said, but not to the tomb of the Capulets.—No! As long as the volumes of THE VETERINARIAN are preserved; whilst there exists in the profession a capability of appreciating rare talents, professional

worth, and individual excellence, the name of *Castley* will be preserved from oblivion, and embalmed with the most pleasing reminiscences in the memories of his surviving brethren. It is pleasing when too many are allowed to put their feet in our professional bark who can neither row it onwards in the course of respectability or steer it with the rudder of improvement; it is pleasing, I say, to have one beacon to guide us,—to have a name like Castley's to point to,—one who would do honour to any profession.

I have just looked through the last twelve numbers of THE VETERINARIAN; and I would recommend those who, like myself, have been too much in the habit, on its monthly arrival, of giving it a cursory perusal, to cull its choicest flowers, and then to put it on the shelf to be forgotten,—I would recommend any such to peruse it again and again, and to make what is valuable their own.

In the last volume of THE VETERINARIAN, besides the excellent lectures which grace the beginning of each number, there are many valuable papers; and none more so, in my opinion, than the communications on the diseases of cattle from Mr. Friend: I, for one, must acknowledge myself much indebted to him for the statement of his mode of treatment of redwater, and some other diseases; and which are the more valuable, as it is apparent to most men that his views of pathology are founded on anatomical knowledge, and are in strict accordance with physiological facts. He points out in a very able manner the different idiosyncrasies of the ox and horse, the peculiarities of the structure of the digestive apparatus of cattle, and their liabilities to particular diseases.

Mr. Pritchard's observations on the diseases of the heart do credit to his ingenuity and research: it is much to be regretted that the maladies he treats of should still be incurable. Mr. Brown's observations on the spasmodic contractions of the diaphragm are interesting and original: I have met with a few cases that bear out his remarks.

Mr. Harrison has recommended a new medicine, the "decoction of the common broom," in cases of anasarca; but I cannot discover, even from his own cases, any particular advantages it has over other well known and more easily prepared medicines. I have never had any difficulty in removing anasarcous swellings by exciting the bowels or the kidneys, or both; and, where the engorgement has been considerable, punctures with a lancet, followed by fomentation and bandaging: to this treatment tonic medicine has been occasionally added.

I see there are some cases recorded of the operation of neuro-

tomy being performed *above* the fetlock joint. It might not, perhaps, be generally known that Mr. Sewell does not advise sensation to be entirely cut off, and will in no case perform the operation above the fetlock, except for ossification of the lateral cartilages. It might be useful to the profession if the history of some of these cases were known some eighteen months after the operation.

I have met with two instances of the giving way of the perforans tendon—one, however, was a case of extensive disease reaching to the fetlock joint; and the operation was had recourse to as a *dernier resort*, and so far succeeded in enabling the animal, otherwise totally useless, to do a twelvemonth's work. The rupture was immediately produced by the mare's galloping about in a field into which she was turned with some other horses. On being told that she was again lame, I went to see her; and at the distance of a hundred yards I could discern sufficient to inform me of the nature of the mischief, so very striking is the elevation of the toe and depression of the heel in such distressing cases. The other was a case of navicular disease and considerable contraction of the feet. The operation was first performed below the fetlock without effect (when I say without effect, I should mention that the horse went much better immediately after the operation, but in a few weeks became as lame as ever); the operation was then performed (he being of little value) above the joint, and of course he immediately went free from pain, and worked for several months in a coach. An enlargement, however, gradually took place below the seat of operation; he was in consequence changed away, and in a few months afterwards I heard that his foot came off.

Mr. Sewell performs the operation *on* the fetlock joint, just below the part where a branch nerve is given to the front of the foot. He conceives that there will be then sufficient sensation to prevent the tendon's rupture, and he finds that, after his mode of operating, such deplorable sequelæ do not occur.

In the April number there is a case of glanders, related by Mr. Storry, as being cured by fumigating the nostrils with carbonic acid gas (accompanied with the administration of internal medicines), on which I would venture a few remarks. I do, however, not intend to say a word against the practice of fumigation: I think, indeed, it is by far the best mode of locally affecting the passages of the head, and has been too much lost sight of by veterinarians.

Glanders, I take it, may be either local or constitutional; and, if the former, it may be either curable or incurable, according to its situation. Now, Mr. Storry says that the horse had a farcy

ulcer; the complaint therefore must have affected the system, and, such being the case, topical applications would alone have been insufficient. The medicines made use of internally were hellebore, antimony, and vegetable tonics: the utility of the latter no one will dispute, but the benefit of the former I should fancy must be apocryphal: its effects are considered to be nauseating and debilitating, and, as such, I cannot understand its beneficial agency in glanders. Mr. S. does not say whether the farcy sore extended or was cured by topical applications, and it does not usually occur that a farcy ulcer remains solitary. The disease, however, was undoubtedly glanders, and the cure appears to have been perfect, as nine years have since elapsed. Has Mr. Storry never met with any cases during this long period on which he could put in practice his fumigating plan? and if so, have they been attended with success? "One swallow does not make a summer."

The cures of glanders are, unfortunately, like "angels' visits, few and far between;" but they *are* occasionally made, and why should they not? If the disease is confined to the membrane of the nostrils, the matter has a free exit, and the ulcers may be healed by topical applications, or by improving the tone of the system, and bringing about a healthy action; but if the complaint extends to the sinuses of the head, the pus that is formed, having no means of discharging itself, will excoriate the surrounding membrane, and affect the bones of the head: and in cases of this sort, *every* medicine must have a similar result, whether it be the sulphate of copper, or cantharides, or any other that the fertile fancy or ingenious folly of man has devised. A *specific* for glanders is still undiscovered; and that and the philosopher's stone, I imagine, will be found together.

I dare say many practitioners could instance cases of glanders having been cured. I remember one decided case, and one which could be traced to contagion, presenting visible ulceration of the Schneiderian membrane, and hard enlargement of *one* submaxillary gland. The medicines internally administered were arsenic, and the oxymuriate of mercury, combined with vegetable tonics; a mercurial liniment was applied to the gland, and an astringent lotion to the nasal ulcers. A cure was, by these means, completed, and the horse had no return of the complaint. In a case of confirmed and considerable nasal gleet (neither attended with cough, nor preceded by catarrh), accompanied with a *slight enlargement only* of the glands, the sulphates of iron and of copper effected a cure. In another case, of considerable discharge of pus from the nostrils, sudden in its commencement, and *irregular in its continuance*, powdered lyttæ,

as recommended by Mr. Bracy Clark, had the desired effect in the course of two months.

It is a pity, I think, that there has not been made a regular course of dissections of glandered subjects; not merely a post-mortem examination of a poor animal that has for months been labouring under the disease and medical treatment; but an examination of horses in *every stage* of the complaint. More, probably, would be learned from this than from the continued trial of medicines; one case only out of twenty, perhaps, proving successful. We should then be enabled to know the proportion of cases in which the lungs are affected;—how far, indeed, the disease had extended itself in a given time; and the probability there would be of a cure being accomplished in cases presenting certain external appearances.

The subject of glanders reminds me of Mr. Vines. His book certainly contains much originality, and shews that he is a man of research and perseverance; but if he sends forth a book for public perusal, he must expect to receive public criticism. Now, because he was not reviewed in THE VETERINARIAN quite so favourably as he wished, he makes Mr. Youatt's lectures the subject of attack; and in terms so strongly impregnated with his favourite remedy, cantharides, as plainly to evince that his object was not so much to inform and instruct the public, as to gratify a feeling of pique. It might have appeared more friendly towards Mr. Vines if his work had been spoken of more favourably; but he should remember, that the editors have a duty to perform towards the public, on which their reputation depends. Now, supposing that I had wished to have given a correct opinion of the work, and for this purpose I had consulted a review, written after Mr. Vines's own heart; in which it was not only recommended as being good in its doctrines and sound in its principles, but in which it was stated that the arrangement was perfect, the reasoning clear, and the language good. I should then have read the book; and finding that there was a great deal of obscurity, that the arrangement admitted of considerable improvement, and that the language was by no means choice or appropriate, I should have turned away with disgust both from the book and the reviewers: against the former I should, perhaps, have been unjustly prejudiced;—the latter I should both distrust and despise.

The doctrines Mr. Vines advances may be, in a measure, just and good; but he is certainly not a happy writer. The very term he use makes of, "healthy disease," is the greatest of obscurities. A dictionary would have informed him that disease means *sickness*, and health "*freedom* from sickness." It is, therefore,

quite as much in violation of the king's English, as the expression of the fellow who, in allusion to an attack he made on another, said, "he was up to him;" and on being asked what he meant by "being up to him," why, "down upon him, to be sure," said he. Mr. Vines might have expressed his meaning by the terms *vigorous* disease and *languid* disease; or, if he must have words that contradicted each other, he should have apologized for their use, and explained the exact meaning he intended them to convey.

Mr. Vines asks a question, and a very curious question it is for a *rational* man to ask: he says, "what mortal could, for a moment, have supposed it possible, that good and sound pathology could coexist with wrong applications of terms and ambiguity in language?" Now, at the risk of being thought by Mr. Vines an extraordinary "mortal," and a "poor man" too, I must beg leave to tell him, that not only do I think it *possible*, but highly probable, too, that this may be the case; and just in the same way that the dirt and dross may coexist in the same mass with the precious ore.

Mr. Vines says, "he (the Reviewer) has very cunningly left out the *facts* which are there brought forward in support of my remarks, which he has taken away." This may be very clear to Mr. Vines, but it is very unintelligible to me, for I cannot understand what it is he complains of being taken away. Mr. Vines accuses the supposed reviewer, Mr. Youatt, of a very dreadful crime; it is no less than "stopping short in the middle of a paragraph, and *likewise of a sentence.*" On reading this, I immediately referred to Mr. Vines's work, and, finding that there was only *one* sentence contained in this paragraph, it struck me that this was as bad as "killing a man, and depriving him of life too." There is a semicolon between the part inserted and the part left out, which is merely a reference to facts that were quite unnecessary to print, *as the soundness of the doctrine they were brought forward to support was acknowledged.*

But Mr. Vines says that, in the part animadverted on, there was no wrong application of terms, or ambiguity of language; and to point them out "*I now defy him to do.*" "They should never throw stones who have windows of glass." Let us, for a moment, refer to the part over which this awful defiance is cast. Mr. Vines says, "In common inflammatory diseases the system is *always* in a more or less healthy state; but, on the contrary, when those symptoms of disease, which constitute glanders or farcy occur, the system is always in a more or less unhealthy state." Now I have frequently (and I am sure others have too) met with cases of common inflammatory disease occurring in

horses whose system has been in an unhealthy and debilitated state, and yet neither glanders nor farcy has supervened ; and I have seen these diseases both occur in horses that otherwise presented every appearance of health and vigour.

Mr. Vines goes on to say, that, "in proof of this I may advance, that the diseases of a common inflammatory origin, from neglect or improper treatment, frequently degenerate into glanders and farcy." Now this may be very true as an individual fact; but how this can prove Mr. Vines's position I cannot tell. Mr. Vines' reasoning is, that because strangles, colds, &c. frequently degenerate into glanders, therefore it follows that the system must be in a healthy state when these diseases occur, and in an unhealthy state when glanders and farcy take place. This is just as good reasoning as that "Tenderden steeple is the cause of Goodwin sands;" because, before the former was built, the latter did not exist. And if it is ambiguous, then what becomes of Mr. Vines's defiance?

"O wad some pow'r the giftie gie us
To see oursels as others see us!"

Mr. Vines has certainly no right to the motto, "Aut Cæsar aut nihil;" he should, therefore, in future, be satisfied with partial praise ; and in his literary attempts not allow the feelings of rancour to usurp the empire of reason, or vanity and egotism to push common sense aside.

I am afraid I have intruded much too long on your space with my desultory remarks; but I will only add, that my object has been solely the promotion of inquiry and the elucidation of truth. My observations have been freely made: I hope they will be fairly received;—"Honi soit qui mal y pense." So, wishing THE VETERINARIAN, its editors, and contributors, a happy new year,

I am, &c.

ON ANASARCA, AND THE EFFECT OF PURGATIVE MEDICINE ON RUMINANTS.

By Mr. E. A. FRIEND, *V.S., Walsall.*

Gentlemen,—ALLOW me to pay my respects to you in the first number of THE VETERINARIAN for 1834. Allow me also (for it is yet in time) to wish you a "Merry Christmas;" and should there be amongst you less of the wassail and the wine cup ; should the yule log burn less brightly on your hearths than it was wont to do in the olden times, when this country was emphatically termed "Merrie England;" may you still experience no lack of good cheer, and valued friends to assist your enjoyment of it!

May you want none of that heartfelt comfort which Englishmen know so well how to appreciate, and which so amply compensates for the rude revelry and the boisterous mirth which used at this festive season to make "roof and rafters ring" in the homes of our forefathers!

And "a happy new year to you!" gentlemen. May you be happy in the enjoyment or the restoration of health; happy in your personal prospects; and, "last not least," happy in rendering this work (your offspring) more beloved, more interesting, and more beneficial to the profession! I am much pleased to see, that though you have not entered the name of the "Sweet bard of Avon" in your list of Collaborateurs, yet we have a contribution from him in the body of the work. I am sure your hunting correspondent has very happily hit the taste of a great number of your readers by this selection. And do you not think, gentlemen, that he and many others (who are so far fortune's favourites as to be fixed in situations where a frequent breathing across the country, listening to the wild melody of the pack, so far from being a hinderance is, peradventure, a furtherance of their professional avocations) might occasionally favour us with cases, opinions, &c., resulting peculiarly from the study (in the stable and in the field) of that most noble of all our patients, the "fleet-footed hunter?"

I know not how far you may be satisfied with a retrospect of this work for the past year. Of one thing I am certain, that your contributors can have no possible chance of finding fault, as it rests with them to modify its contents; and this ought to be the general feeling amongst us, that if THE VETERINARIAN does not contain all that is bright and alluring, as well as all that is sterling and beneficial in veterinary science, it is the fault of those who are capable of rendering it so, and not of the impartial editors.

I recollect having once heard a song that began and continued by stating all that it was not about, and ending by saying, that it was about long enough; and, lest this should be your fiat on my paper, I proceed to offer a few remarks on Anasarca.

By this I do not mean simply that debility of the vascular system producing trifling œdematous swellings, the sequel of some inflammatory attack, but anasarca existing as a primary disease; and that state of it which has at times, under the name of feltric, committed such extensive ravages amongst young horses in the fens of Cambridgeshire and Lincolnshire.

This is a disease in which it is highly necessary to study the predisposing causes before proposing curative measures; as, without the strictest attention to remedy these, it would be found

that no course of medicinal treatment, however judicious in other respects, could succeed.

It is a disease which generally attacks colts from one to three years old. The symptoms are œdematous swellings of the belly, the legs, the sheath, lips and nose, accompanied by great debility, general laxity of the muscular fibre; producing, in its rapid progress, diarrhœa and ascites, and terminating very commonly, under injudicious treatment, in death.

The predisposing causes are to be found in the food and water; and, however mysterious the agency may be by which all this is accomplished, there is no doubt as to the fact itself. It is towards the latter end of the year that they are more commonly the subjects of this attack, when they are living on coarse sour grass, and generally drinking water rich with green slime.

It appears to me that there is this combination of circumstances in the disease, such as I have described it, great want of tone in the stomach and intestines, general debility in the vascular system, decreased power in the absorbents, and that the action of the kidneys is greatly impaired also. Under such impressions, the course to be pursued naturally appears to be, in the first place, total change of situation, food, and water; and this, as I before hinted, is absolutely essential to success. The best plan to adopt is, to have the animals removed to a covered shed, or warm yard at least; their food should be good sound hay, with a plentiful allowance of *dry barley;* very little water, and this with meal of some kind stirred in it. The external swellings may be easily reduced by scarifications and stimulant applications. The medicine given must be such as will act powerfully upon the kidneys, and give tone to the stomach and intestines; and bleeding and cathartics must be carefully avoided.

I do not write altogether unadvisedly on this subject, for, besides having had some experience in fen practice myself, I have had the advantage (so far as it may be imparted) of the experience of my father, a respectable practitioner for more than forty years in a fen country, and whose treatment of this disease, in the manner I have described above, has been attended with great success.

Perhaps one of the greatest peculiarities in feltric is, the flabbiness and loose texture of the muscles; in fact, it seems as if a complete want of tone pervaded the whole system. Its termination in ascites has helped many a blundering practitioner with his employer, as it is but seldom that either of them have thought it necessary to search for any other or remoter cause of death than "water in the belly;" a circumstance which they have generally considered that none but Providence could either avert or remedy.

If I might be indulged a little further, I would beg leave to make a few remarks on the point at issue between Mr. Harrison and myself respecting the effect of purgative medicines in certain diseases of ruminant animals. I would not have troubled you again, except that Mr. H. has (unwittingly, I have no doubt, but yet to say the least of it) carelessly misstated me in his last paper on the subject, in THE VETERINARIAN for November 1833. He has there stated, that it is "a generally admitted fact, that purgatives do not exercise their effects upon the stomachs; and he has quoted, or rather misquoted, an opinion of mine, from an article in the April number, to prove that I appear to entertain similar views on the subject. I must have written hitherto very obscurely if I have not proved to you that I hold a directly contrary opinion. It has been my endeavour to shew the urgent necessity, in all such cases, of unloading the stomachs; and I find, on reference to the very article which has elicited these remarks from Mr. H., that I have actually congratulated myself therein, upon having, as I thought, successfully combatted this very opinion.

But, gentlemen, I am aware that the old adage of there "being no rule without an exception" will apply to my opinion on this subject also; and it was in acknowledging and considering this exception to a general rule, that I made use of a remark, the misquotation of which by Mr. H. I herein complain of.

He has stated this as my opinion, that I consider it "problematical whether medicine can *at all* affect the first, second, and third stomachs." Now, if he, or any one who cares a straw about the controversy, will refer to the remark in question, in page 201 of THE VETERINARIAN for April, he will find that I was considering *the exception and not the rule;* and that under this impression I said, that "the most dangerous portion of the viscera is the first, second, and third stomachs, because we can most *certainly* give medicines to act upon the abomasum and intestines, while the *certainty* of affecting the first three is to me rather problematical," &c.

Now, whoever looks at this, *a correct quotation,* will at once see that the gist of the argument rests on the *uncertainty of at all times* acting on the first three stomachs (and not on the impossibility of so doing, as he makes me to say): an argument founded on positive fact, and in perfect keeping with my expressed opinions, that there are occasional exceptions to the general rule, of medicines given in solution entering directly into the rumen.

I feel a right to complain also of a question which Mr. H. asks me, viz.:—"Does it not enter into his philosophy that his exer-

tions would be more laudable, were he to direct the force of his artillery against the offending parts, viz., the paunch and manifolds?" proceeding also, as Mr. H. does, to shew me how this may be done by the use of stimulants. Would not any one suppose, from this question and the advice following it, that the use of stimulants for this purpose had never entered into my practice; or that, at any rate, I had never urged the necessity of their application? Why, gentlemen, in the very paper he is commenting upon, besides strenuously recommending them more than once in the course of it, I positively closed my remarks by pressing the use of them for the same purpose; a circumstance which, I apprehend, Mr. H. must have entirely overlooked when he penned the question.

I am fearful this controversy may not interest your general readers, and I assure you it should have ended with Mr. H.'s rejoinder, had he not implicated me in opinions which I conceive to be highly erroneous, and tending to induce a practice at once improper and inefficient.

Mr. H. appears to fear that my hobby may break down with hard riding; but so far am I from being afraid of this, that, "entre nous," I really believe he would carry double; and if Mr. H. would condescend to mount also, I should feel great pleasure in letting him ride first.

Seriously, gentlemen, there is an honest avowal of principle in Mr. Harrison that I very much admire; and if, in the course of these remarks, you find any thing in the least discourteous to him, as a highly respectable and intelligent practitioner, expunge it without mercy. I have been delighted and instructed with a great deal of matter in his articles; and I hope he will give me credit for acting from conviction in those points wherein we differ.

Does Mr. Friend think that we would alter, or that Mr. Harrison would wish one syllable of this to be altered? Such is the way in which our controversies should be carried on, and then, indeed, we should rapidly progress in veterinary science, and in public estimation too.—EDIT.

A CASE OF UNUSUAL PARTURITION IN A MARE.

By Mr. JOHN HAWTHORN, *V.S., Kettering.*

ON the morning of March 26th last, I was sent for to see a mare of Mr. Ward's, of Wickley-Mill, which, the man said,

"had something wrong in foaling; for the foal seemed to be coming the wrong way." When I saw her, I was struck with the singularity of the appearance. The foal was protruded as far as the middle of the chest, and the fore legs were almost a yard asunder, one hanging down towards the thighs, and the other standing up above the tail. The body of the foal was lying on its off side: of course it was dead. The near leg had, in the act of foaling, been forced through the rectum, and then through the anus.

The mare was cold and feeble; the pulse was scarcely perceptible, and she seemed to be sinking rapidly. I told the owner it was almost a hopeless case, and that he must decide whether the extraction of the foal should be attempted. He said he should wish it to be tried, as the mare could but die.

The nearest place which was suitable to the operation was a barn, a quarter of a mile off, to which she was immediately walked; and as I followed her, and witnessed her staggering gait, I felt as if she was going to execution. She was thrown, and pulleyed up to a joist. The near leg of the foal was dissected off at the knee, and with the right hand forced back into the vagina, where it was received by my left hand, and drawn a little forward. As the only obstacle of the foaling was now removed, the remaining part of the operation was soon accomplished, and the mare got on her legs. The wound through the rectum was terrific, as I had easily put my arm through it. She was then walked back home, and seemed much better; and during the day had some purging medicine, and was ordered to have no hay, but to be kept on wet bran and clover for a week.

She was raked two or three times a-day, and the vagina was washed out. The fæces which escaped through the wound into the vagina were not wholly expelled, but a portion of them lodged, and therefore it was necessary frequently to cleanse the vaginal passage. The wound in the rectum healed very rapidly, and the mare never exhibited any unfavourable symptoms, with regard to her health, after the extraction of the foal. On the 5th of April I considered her well enough to discontinue my attendance, and she soon afterwards went to work as if nothing had happened, and has remained well to this time.

A CASE OF RUPTURE OF THE UTERUS IN A COW.

By Mr. F. King, *Jun., Stanmore.*

As the following case is one of not very frequent occurrence, and as it affords another proof of the utility of post-mortem

examinations, I have sent it to you, if you think it worth your notice. It may offer a useful hint with respect to a cautious and guarded prognosis in any doubtful case:—

A gentleman near Stanmore, in the beginning of last summer, purchased a cow, forward in calf, from a drove. She was kept with other cows, and continued doing well till the time arrived when they expected she would calve. The udder filled suddenly, and, no other symptom of approaching parturition coming on, after a day or two I was requested to see her, as it was thought she had gone beyond her time: I accordingly went over, and found her with a smooth and healthy skin; legs warm; and no expression of pain or uneasiness, except that she moaned rather heavily occasionally. There was very little preparatory alteration in the pelvis; the udder was distended; she ate and drank sparingly; the abdomen was full, but not more so than would be looked for in a cow down-calving, and she passed no fæces. Considering these symptoms to proceed from some disordered state of the intestines, I gave her an aperient draught, with orders for gruel, mashes, and green food.

On the next morning a message was sent over that she was no better, and had now got the redwater, and that they had several times observed bloody urine pass away. I thought there was nothing very extraordinary in that, as it frequently happened with constipation, and I promised to see her: and on visiting her a few hours after, found her down on the left side, in a narrow stall, and moaning a great deal. The abdomen was as full and tense as it could possibly be; nothing had passed the bowels.

The attendant was *sure* she had the redwater; but, on close inquiry, I found that the water did not come in a regular stream, but in a kind of gush. The bowels were still considered to be the seat of the disorder, and more aperient medicine was given. In the evening she died, and a message was sent to me that there was no occasion to come over again; and, as is generally the case, the animal was sent away almost immediately. Had it not been for the person who fetched her away, I should not have known what was the real state of the case; but he (as is common when decomposition takes place), in order to save the flesh, emptied the abdomen. In doing this, he observed something unusual protruding; on opening still farther, he found it to be the calf, which had escaped through a rent in the uterus. Its skin was so puffed up and distended with air, that it occupied full three times the space of a living calf; compressing the intestines into so small a space, that their natural action was wholly suspended. The constipation, and the gush of bloody serum (mistaken for urine), were now sufficiently accounted for;

but, unluckily, no farther examination of the uterus was made. I could not find out that she had met with any accident. It was evident the calf must have been dead some time; but yet no symptoms of uneasiness were visible until putrefaction took place, which must have been very rapid indeed, as she died within twenty-four hours after I first saw her.

The rupture of the uterus was, doubtless, the result of the extraordinary distention of the fœtus in the rapid progress of decomposition, and the cow quickly sunk under the constitutional disturbance hereby occasioned.

Mr. King, sen., has kindly added the following cases, illustrative of the extraordinary manner in which nature will sometimes bear up against these causes of disturbance. We wish that he would oftener favour us with these recollections of a long, and honourable, and successful practice.

CASES OF RETENTION OF THE FŒTUS, WITH SLIGHT IMPAIRMENT OF HEALTH.

By Mr. F. KING, *Sen., V.S., Stanmore.*

THIS case of my son's has brought to my recollection two little histories, which have nothing particular in them except shewing the extent of living power in some animals above others. If you think proper to attach them to his communication, do so.

The first case occurred here in this village some years back. A cow, healthy, fine, and fat, was slaughtered; and the uterus proved to contain the skeleton of a calf almost entire, all the soft parts having separated and wholly escaped. Nothing of her history was known.

A few years ago I was called to see a heifer, which appeared to be rather losing condition, and which had been observed occasionally to void some offensive matter from the vagina. Before I could get to her, some portion of a calf's fore extremity came away. The owner was very apprehensive of her well doing, and earnestly pressed the extraction of the remainder of the fœtus.

On examination, I found the os uteri so small and contracted, that I could not pass my hand. As the beast ate and drank, and was so little, either locally or constitutionally, disturbed, I persuaded him, after relating to him the previous case, to leave her to dame Nature, watching her in case of assistance being required. He consented: and by degrees, and in detached portions, the greater part, or perhaps the whole (as she was not confined), of the calf came away; and she did well and became fat, and was sent to Smithfield market.

ON DILATATION OF THE HEART AND HYDROPS PERICARDII.

By Mr. PRITCHARD, *V.S., Wolverhampton.*

I AGAIN resume my pen to pursue my observations on diseases of the heart to a close of that subject. This has been somewhat delayed from other engagements; but as the old saying is, "better late than never," it remains for me to say something on dilatation of the organ and hydrops pericardii.

It will be seen from what I have already said on hypertrophy and dilatation, that the former produces its ill effects on the economy of the arteries, while the latter impedes the functions of the veins and absorbents principally; and from this derangement of the venous circulation no organ of the body is so liable to have its office perverted as the liver, from its great circulation of venous blood, and the termination of its veins at so short a distance from the right auricle of the heart, compared with the other viscera. This turgescence of blood in the liver rapidly extends through the vena porta to the intestines, the colon and cæcum principally suffering, and to the spleen. The absorbents next become surcharged, from the resistance offered to their larger trunks giving a general plethora to the whole. The symptoms that must inevitably follow will now be evident: the animal gradually becomes lean, the belly puts on an unusual rotundity, the coat has an unhealthy appearance, the legs become anasarcous, œdematous collections appear underneath the abdomen, and the bowels are irregular, nevertheless the animal continues to feed. With these outward features of dilatation of the heart's cavities, if we apply our ear immediately behind and above the elbow in the region of that organ, and find the contraction of the cavities announced by a long, dull, sonorous clapping stroke,—rather loud and increased in frequency, although its beats are regular,—together with a regurgitation of blood high up the jugulars, the case is confirmed dilatation of the right side of the heart; and we may judge whether it is the auricle, or the ventricle, or both, by observing the above phenomena during their contractions. In this state the subject may linger on some short period, when some viscus, as the liver or spleen, otherwise some large vessel, ruptures, and death ensues from the hæmorrhage. This hepatic hæmorrhage ensues from an immediate cause, very different to that which takes place in chronic inflammation of the parenchymatous texture of the liver—an affection I, at some future time, purpose to communicate my opinions upon to this Journal. Dilatation of the left side of the organ I have never seen occur but in conjunction with that affection of the right: it is com-

paratively of unfrequent occurrence. In the case of the black mare, given page 80 of THE VETERINARIAN for 1833, the left ventricle was much dilated; but its corresponding auricle was unchanged, nor had the lungs in the least participated in the general derangement of the system: the fatal influence of this state of the left ventricle does not appear of that serious consequence to the circulation as is that condition of the right.

Hydrops Pericardii.

This is of more frequent occurrence than either hypertrophy or dilatation. It most frequently accompanies pleurisy: indeed, it is inflammation of a contiguous serous membrane; and but few horses die of acute pleurisy that do not present, on post-mortem examination, more or less sero-sanguineous fluid within the cavity of the pericardium. It is also by no means unfrequent, that pleuritic horses are cut off by hydrops pericardii, in which inflammation in the pleura had considerably diminished, and that in all probability would have recovered, but for the effusion into the pericardium. But, besides this acute pericarditis, the heart is subject to a subacute inflammation of the serous membrane covering and investing it, by which a whey-coloured fluid is effused into the pericardial sac: the symptoms gradually but more slowly develop themselves than in the acute case. One of our best veterinary writers observes, when speaking of the diseases of the horse's heart, "that the subjects of hydrops pericardii manifest no signs that lead us to the seat of their malady, the disease being generally mistaken for pneumonia." But the symptoms of hydrops pericardii are well marked, as I shall be able to shew, in those cases unaccompanied by pneumonia, and also in cases where the lungs are but slightly inflamed. In cases of pleurisy, where inflammation commences at the same time in the pericardium, or, in other words, when pericarditis exists with pleurisy (and it is of pleurisy, and not pneumonia, that pericarditis is a frequent accompaniment), we shall have sufficient signs to guide us in our prognosis, and for reasons stated at the commencement of these papers, it is well for us to be able to decide on its existence; for whenever much water is collected in the pericardium, the case is sure to be fatal, as I know not of any mechanical means within our aid by which the fluid can possibly be extracted, and remedial measures are of no avail.

In inflammation of the substance of the lungs (pneumonia) the flow of blood through them is obstructed in degree with the extent of the inflammation existent in that viscus; the arteriali-

zation of the blood is also proportionably diminished; it is, therefore, easy to conceive two symptoms that must present themselves in pneumonia, viz. an oppressed pulse, and venous blood, very dark in colour. The left side of the heart having less blood to contract upon, less is sent to the extremities, and that not having undergone a due change in the lungs; the legs, ears, and nose are cold; from the tumefied state of the lungs, and the compressed state of the bronchiæ and air-cells, the respiration is rendered quick, difficult, and laborious; neither of which symptoms are present in hydrops pericardii. Again, that obstinate standing upon the legs until the last in pneumonia, is not observed in horses labouring under effusion within the pericardium, particularly when unaccompanied by much pleuritic affection, as may be seen on referring to the case related at page 125 of THE VETERINARIAN for 1833. The symptoms most characteristic of hydrops pericardii are—palpitation of the heart; the carotid arteries beat forcibly, and are readily recognized on applying the finger to their course in the neck; there is a good flow of blood through the jugulars, a copious return of blood through the neck when the state of the pulse is considered; the surface of the body and extremities are warm, and these latter symptoms continue until within one or two hours of the horse's death: these last mentioned symptoms are also present when the malady is accompanied by pleurisy. In a case of this kind, occurring in my practice a short time past, the groom, in information to me, thus observed, "the horse was as warm all over as a toast when he died." In addition to the above symptoms, there is such an expression of anxiety and alarm in the countenance of the animal as no other malady produces. I have said the respiration was but little disturbed in hydrops pericardii unattended by affection of the lungs, and for this reason, that the lungs are not tumefied; there is no compression of the bronchiæ nor air-cells; the blood readily circulates through the pulmonary arteries and veins to the left auricle of the heart; the left ventricle is supplied with blood to contract upon—blood less thick and viscid, from having been oxygenized in the lungs; consequently the extremities retain their warmth, and the veins their current. When the heart is compressed by fluid contained in the pericardium, the diastole of the auricles and ventricles is limited; less blood is necessarily pumped forward by each contraction; and, in order to maintain the circulation, these contractions of the heart's cavities must increase in frequency proportionate with the diminution of the volume of blood contracted upon, thus producing that dreadful palpitation and throbbing of the organ in the advanced stage of the disease.

I now conclude this subject, having fulfilled my promised intentions regarding the several maladies of the horse's heart, in the relation of which I have been as explicit as the limits of a periodical would admit.

Veterinary Affairs.

Extract from the Report of the Veterinary School of Alfort during the Year 1833.

CLINICAL CHAIR.

The influence of the political insubordination of this School on the interests of the hospital attached to it was much to be dreaded. There was reason to fear that, deprived during four months of the succour they were accustomed to derive from this school, the proprietors of horses and cattle would have begun to take their sick animals elsewhere; and, in fact, during the first two months after the reorganization of the school, we had very few patients in our infirmary: but, by degrees, the news of the re-opening of the school spread abroad, the stables became filled, and the patients were even more numerous than they had previously been.

During the scholastic year that has just expired, and which, not having commenced until the 1st of October, actually included only eleven months, 495 animals were admitted into the hospital; viz., 242 horses, 91 mares, 2 cows, 3 sheep, 2 goats, and 155 dogs.

Of the 333 horses and mares, 287 were dismissed cured, or with a fair prospect of cure; and 25 died, after having been submitted to treatment for a greater or less length of time: 21, having been pronounced incurable, were given up to the School, and destroyed.

Of the two cows, one attacked with inflammatory fever was cured; the other was consumptive, and was destroyed.

Two of the three sheep were saved, and the other died of turnsick.

The two goats were returned perfectly cured.

Of the 155 dogs, 124 were cured; and 31 died or were destroyed, after having been given up to the School by their owners.

It appears, then, that only about a thirteenth part of the horses treated in our infirmary have died; a result which cannot fail of being flattering to the School, when it is recollected that the greater part of the animals which are sent here labour under

very serious disease; and that many of them, having been already treated without success, or condemned, are only brought to our hospital as a forlorn hope.

The Professor who is charged with the management of the hospital is happy that he can congratulate the pupils who have this year attended on the clinical course on the remarkable zeal which they have exhibited, and the care, extending to the minutest points, which they have bestowed on the animals committed to their superintendence. It is an honourable testimonial which they will leave behind them at the School, and a noble example for their successors.

922 animals, of which 811 were horses and mares, 4 cows, 101 dogs, 2 goats, 1 pig, and 1 cat, were brought to the School for advice. The Professor, or Assistant Professor, gave his advice verbally, or in writing, with regard to each; and on many of them he performed surgical operations, more or less important.

Finally, the pupils of the fourth year were sent out to treathese animals whenever their assistance was required by the neighbouring proprietors; whence it resulted that, either in the hospitals, or the daily consultations, the School rendered assistance to 1417 animals.

In the daily clinical lessons, M. Renault has endeavoured to render these numerous means of instruction as profitable as they could be to the pupils. According to their usual custom, he chiefly endeavoured to direct their attention to those diseases which were of most frequent occurrence, and which, consequently, they would oftenest meet and have to combat with in their practice.

Whenever the occasion presented itself, he would place, side by side in the infirmary, animals affected with different diseases the symptoms of which were sometimes confounded. In this manner he rendered the symptoms, which were characteristic of each of them, evident before the eyes of the pupils.

This Professor has also continued the system which he had adopted, of using, among medicinal agents of equal therapeutic value, those which were least expensive. He thus prepared the pupils to adopt, in a manner most beneficial to themselves, and least burdensome to the proprietors, a course of treatment, often objected to where the most severe economy does not preside over the administration of the drugs.

Finally, to render his clinical course most profitable, and to assure himself that his observations had been well attended to and understood, M. Renault often called upon the pupils of the fourth year to repeat the pathological and therapeutical cases which had been the object of their attention during the preceding day. This mode of instruction was accompanied by the happiest results.

We will collect some of the interesting facts which our infirmaries have witnessed during the last year.

GLANDERS.—This year, as in most of the preceding ones, the horses affected with glanders, that were sent to the hospital, were numerous; and, in spite of the care which was bestowed upon them, and of the most minute attention to the means that appeared most rational, and that had been boasted of by others as the most efficacious, we cannot bring forward a single case of complete cure after the animal had presented the characters of confirmed chronic glanders. Two only were returned to their owners that seemed to be cured: there was no longer discharge from the nostril; the enlargement of the glands under the jaw had almost entirely disappeared; and white, thick, ray-like cicatrices had replaced the ulcerations of the pituitary membrane. A little time afterwards these horses were brought back to the School, discharging as abundantly and the glands as enlarged as at their first coming; and, a circumstance very remarkable, having ulcerations in the middle of the apparently fibrous tissue which constituted the cicatrices of the first chancres.

At the same time, many horses, that had been brought into our infirmary when glanders was just commencing, were returned in good health, after a residence among us more or less prolonged. These were horses of strong constitution, and on which we either observed a slight discharge with a considerably enlarged gland, or glands very little enlarged with a very abundant discharge.

Ulcerations of the nasal membrane have always seemed to be susceptible of cicatrization when they were accessible to the cautery, and were not accompanied by enlarged glands, or discharge.

Nasal Hæmorrhages, preceding or accompanying evident glanders, have been frequent this year.

ACUTE GLANDERS.—Some facts, observed in the hospital, have convinced Messieurs Renault and Delafond that a very rapid disorganization of the mucous membrane of the nose, and which is almost always complicated with a malady improperly designated under the title of *mal de tête de contagion*, has been improperly confounded with acute glanders. In *acute glanders*, either there are old ulcers, which all at once spread rapidly and destroy the membrane through a greater or less portion of its extent, and in which case it succeeds to chronic glanders; or it appears at once under an acute type, and then pustules, more or less prominent, develop themselves on the mucous membrane of the nose, and are speedily replaced by ulcers, the progress of which is exceedingly rapid. In both these cases the pituitary

membrane is of a yellow colour; the discharge is more or less abundant, and the enlargement of the glands beneath the jaw more or less considerable.

In the *mal de tête de contagion*, the disorganization of the nasal membrane is neither preceded by buttons, nor ulceration; it follows red, lees-of-wine coloured spots, more or less extensive; a sort of petechiæ in the substance of the membrane: its progress is even more rapid than in acute mange; it is a veritable gangrene, or carbunculous affection of the pituitary membrane.

THROMBUS.—In the space of less than three months, during this year, more than twenty horses were brought to the School to be treated for thrombus, in none of whom it had been developed in less than twelve, fifteen, or twenty days after the bleeding, and without our being able to perceive that the animals had rubbed themselves. This thrombus had appeared while they were at work, and was accompanied, in almost every case, by ulceration of the jugular. During their treatment, which often lasted a very considerable time, there was frequent hæmorrhage.

M. Renault thought he could attribute this accident to default in the plasticity of the blood, which was not sufficiently rich in fibrine to produce a prompt and solid cicatrization of the opening made in the vessel by the fleam. That which afterwards seemed to give much plausibility to this opinion was, that three of the horses, which laboured under thrombus, were attacked by acute farcy, of which they died, and that a fourth died of acute glanders.

GRIPPE.—In the course of the months of May and June last, the period when the malady called *the grippe* attacked the human species throughout almost the whole of France, a great part of the horses convalescent after internal diseases, or affected by surgical maladies, and which were in our hospital, were attacked by a disease having great analogy to the grippe. Diminution of appetite, heaviness of the head, want of spirits, general feebleness, heat and dryness of the mouth, and redness of the pituitary and conjunctival membranes, announce the commencement of the malady. Some of these symptoms become more and more aggravated; and there are joined to them, difficulty of swallowing, abundant and viscid saliva, a cough at first unfrequent and dry but becoming more frequent and moist, and discharge from the nostrils. In many cases the animals return a great part of their hay and corn, or liquid food, through the nostrils: the least pressure on the larynx is generally very painful, and produces cough more or less frequently repeated, and which seems to cause considerable suffering. The pulse, regular and in the natural state in some, is accelerated in a greater number; but only becomes

very strong and quick, and full, when the disease has reached its greatest intensity. The patient does not lie down, but is every instant alternately shifting his feet, as if he was exceedingly tired or weak.

This disease, under which no less than nine horses laboured at one time in our infirmary, continued from eight to twelve days; and in every case it terminated well. The treatment was very simple; it consisted of restriction as to diet, emollient drinks and fumigations, and additional warmth of clothing; two only were bled at the commencement of the disease.

The causes of this affection are unknown. Some lame horses, which during rest had got well, were placed near these sick animals, and all at once became affected; nevertheless there is not enough to authorize us in concluding that it is contagious.

Colic.—The clinical professor has availed himself of several occasions, during this year, to direct the attention of the pupils to the pathognomonical symptoms and the treatment of recent indigestions either with or without undue quantities of food, and compared with those that arise from internal congestion or strangulation. In some horses, whose violent and frequent fits of colic announce intestinal congestion, these symptoms cease all at once, and as it were by magic, at the close of one or of many copious bleedings at the commencement of the complaint. In others, where the colic, less violent, and the swelling of the belly, &c., betray stomachic or intestinal indigestion, without congestion or hæmorrhage, the administration of drinks, with ether, and of injections in which emetic tartar has been dissolved, have had the happiest results; especially upon two horses that were recently brought to the School, and whose recovery was despaired of. These examples of maladies, the nature of which are so different, and whose symptoms have been so often confounded, have been the subject of many clinical lessons, in which the professor has endeavoured to impress the minds of his pupils with the importance of the diagnosis of these maladies, the treatment of which is so different.

Section of the Perforans Tendon.—The success attained in our School by the division of the perforans tendon, in horses lame in the fetlocks, has induced many of the neighbouring proprietors to send to us, in order that they might be subjected to this operation, many horses which this infirmity had rendered unserviceable. These animals were accordingly operated on, and, as two of them work in the immediate neighbourhood of the School, we have been enabled to satisfy ourselves that they were completely cured; and that the limbs operated upon have recovered all their strength, although these animals

were put to hard work much sooner than prudence would have justified.

Desirous of knowing in what extent of injury of the part the section might be made with success, Messieurs Renault and Delafond have operated on some old horses, so lame and bent, that they could only rest on the very point of the toe. These animals, some of which had exostosis at the coronet, and which had been sold to the knacker as incapable of performing any work, were operated upon in the same manner as those mentioned above. The limb had become straight, and the foot was freely put to the ground three weeks after the division of the tendon. These horses were destroyed; and we were convinced, by dissecting the tendons, that, in that space of time, the portion of tissue which reunited the two ends had already assumed very much the appearance of tendon.

Plantar-Neurotomy.—An operation not less simple, and as happy in its results. Plantar-neurotomy has been practised eight or ten times within the last eighteen months in our hospitals; whether for osseous tumours on the fore part of the coronet, or contracted feet, or old lameness. In the first of these cases the anterior branch of the nerve alone was divided; in contraction of the foot the posterior alone was operated on.

In three horses with contracted feet, and on whom it was judged necessary to excise the nervous trunk on each side of the cannon bone, the precaution recommended by M. Berger was adopted, to leave an interval of some days between the first and second operation.

All the horses that were thus operated on were returned to their proprietors free from lameness; and we know that many of them are working and sound at the present day. There are now in the hospital two horses that have been submitted to this operation, and of whom we presage the best results.

Castration by Torsion.—Reflecting on the accidents that often follow the castration of horses by the clams, and imagining that they might be avoided by the mode of operation (torsion), which consists in twisting and tearing the cord, MM. Renault and Delafond have contrived an instrument, by which the difficult manipulations of this necessary operation may always be performed with comparative ease, and the most advantageous results obtained. They propose to put this fully to the test on horses of every age and constitution, and at every season of the year. The result of their proceedings will then be laid before the public.

Veterinary Medical Jurisprudence.

ON THE FORMATION OF CATARACT.

Roberts *v.* Croft.

On the 23d of June, 1831, the Rev. N. Roberts of Oswestry, purchased a five-years old horse from a Mr. Croft of Baschurch, surgeon, and which was returned as unsound, in consequence of a very small hernia existing near the umbilicus.

On the 4th (or 18th) of July following, Mr. Hickman, a veterinary surgeon from Shrewsbury, was sent for by Mr. Croft, to examine him respecting the hernia, but which he did not consider to constitute unsoundness. On farther examining him Mr. H. found that he had a small cataract in the near eye, and, of course, pronounced him *then* unsound. Soon after this, an action was brought by the purchaser against Mr. Croft for the amount (50 guineas) paid for the horse; and the trial took place at the Shrewsbury assizes in the month of March 1832, when a verdict was given for the plaintiff in consequence of the cataract. The point respecting the hernia was not entered into. A report of the trial is given in the fifth vol. of The Veterinarian, page 461.

Mr. Hickman, Mr. Collier of Chester, Mr. Richards and Mr. Crowe of Shrewsbury, veterinary surgeons, all gave evidence on the trial, "that a cataract *never forms* in the horse except as the consequence of repeated inflammation in the eye."

Mr. Clay, of Shrewsbury, was examined for the defendant, who said, "that cataracts may be formed in a fortnight or three weeks; and that he has known *many* instances where they had been formed in *less time:* that he has known them to be formed without active inflammation, and without any previous apparent disease of the eyes; and has detected them when the owners had not the slightest suspicion of any disease in the eye, and had declared that no previous inflammation had been observed. He (Mr. Clay) thought it not improbable that a small cataract like the one in question might form between the time that the horse was sold and that when the disease was first discovered." The period between the horse being purchased and returned appears to be disputed, Mr. Hickman asserting in his evidence that he believes it was on the 4th of July, whilst others say it was on the 18th of July; so that, according to the first statement, there must have been only ten days, while, according to the

others, twenty-four days had elapsed; which is a material difference in time for a cataract to be formed in.

Mr. Hickman also wrote the following letter in the Shrewsbury Chronicle, which it may be worth while to record, as it gives the opinion of the celebrated "Nimrod," whose writings used to adorn the pages of the Sporting Magazine: though I by no means agree with Mr. Hickman that Nimrod's opinion is as good as Mr. Coleman's either.

"Shrewsbury, June 4th, 1832.

"Sir,—In consequence of a report being circulated that the Professor of the Veterinary College had written a letter to a farrier in this town, with reference to a late trial at Shrewsbury assizes, stating that a *cataract* might form in a horse's eye in ten days, I wrote to the Professor to ask the question; at the same time reminding him of the words he made use of in his lectures on the eye in the year 1820, when I was a pupil of the College, viz. 'Cataracts never appear suddenly, or without previous inflammation, in the horse; but not so in the human subject.' Mr. Coleman has not yet answered my letter; I have, therefore, submitted three questions to a gentleman I consider equally capable of giving an opinion, the answer to which, I think, has put the question to rest. For the present I shall not make any observations upon the subject, but hand you the letter for publication.

"I am, sir, your obedient servant,

"Edward Hickman."

"Chateau Denys, near Calais, May 15th, 1832.

"Sir,—Absence from home has prevented an earlier reply to your letter of the 5th instant, submitting to me the following questions:—

'Do cataracts appear in the eye of a horse suddenly, without the eye first being in a state of inflammation?'—*Certainly not.*

'Do you think that a cataract could have formed in twenty days, without previous inflammation?'—*I never knew or heard of such a case.*

"Should you not consider the cataract, or the diseased action which caused the cataract, to be in the eye, or in the system, on the 23d, when the horse was sold by Mr. Croft?"—As you state the fact of your finding the cataract the second week in July, or twenty days subsequent to the sale, it is my opinion that the diseased action, the predisposing cause, must have existed previously to the first named period. My idea of a cataract (I state it with deference) is, that it is solely the effect of inflammation of the capsule of the lens; and *cannot* occur suddenly, nor until

inflammation has attacked the eye several times. I will not assert that it might *not* occur in a month after an inflammatory attack, so as to be perceptible, but I should rather give it a wider latitude. Considering the number of horses I have been possessed of, cataract has dealt leniently with me: only three cases, but each of them full three months in the completion of them; and in each I was agreeably amused with the off-and-on system—one week blind, and the next not blind. The cases were, first, a mare I bred in Hampshire. It was a three months job; and I rode her hack two years stone blind. Secondly, the big grey horse I had at Shrewsbury. He carried me a hunting more than two months, after the opacity that forms the cataract commenced, till at last he could see a hedge, but not a ditch, with Lord Cleveland's hounds. He did not, however, go quite blind with either eye, until he had been some time a leader in the Nimrod coach. I date his blindness to a violent inflammatory attack two years before, when he was not my property. The third case is stated at length in one of my letters in the Sporting Magazine. It was a horse of my own that was seized with violent inflammation after a severe run with Sir Bellingham Graham's hounds in Leicestershire. He was stone blind the following day; but after many months experience of the on-and-off symptoms, cataract formed in one eye, and the other stood sound.

"You ask my permission to insert this letter in the Shrewsbury Chronicle. My name has been too long before the public to make me nice on such matters, and I am always happy to promote any inquiry into the state and condition of those noble animals, which have afforded me so much pleasure through life.

"I am, sir, your obedient servant,

"CHARLES JAMES APPERLEY,

"Author of Nimrod's Letters.

"To Mr. Hickman, Vet. Surgeon,
Shrewsbury."

But now to the point:—Mr. Croft's horse afterwards came into the possession of Mr. Watson, a surgeon, in Elersmere, in this county, who disposed of him this summer, *and had then no cataract whatever* (as I have been informed), his eyes being perfectly sound in every respect. Now it appears to me that this was a case of capsular cataract, yet when or how it was formed I cannot say; but, from the testimony of Mr. Croft, who is a very respectable gentleman, and in the medical profession, and who, I believe, bred the horse, and also from that of his bailiff and

groom, and from the colt-breaker who broke him in, who all assert that they never saw the horse with inflamed eyes, we must suppose that he never had any *apparent* attacks of inflammation, so as to produce the cataract; and I am also induced to come to the conclusion from having seen since that time two other similar cases which I will now relate.

The first was a chestnut horse, five years of age, the property of Mr. Hort, in this town, which had two cataracts in each eye; two of them were about the size of a large pin's head, and the other two were each treble that size. His eyes were perfectly transparent, with the above exceptions, and did not shew the least vestige of former inflammation, and which the person that bred him said he had never been subject to. Mr. Hort sold him about the month of December 1831, to a Mr. Dawson, of Burleydam, with these cataracts evident enough; but from that time they gradually disappeared, and in the autumn of 1832 there was not the least to be seen of them, and I saw him a few days ago, when his eyes were perfectly sound.

The other case is a five-years old black cob-mare, the property of Mr. Wray, of Ightfield Heath (four miles from this place), and who purchased her from a Mr. Powell, of Darliston, sometime in 1832. In the month of November in the same year I saw her, and detected a cataract in the right eye, and of the size of a coriander seed. I then advised him to get rid of her, thinking that she would go blind; but being a very useful thing, he kept her. In the month of August 1833, I saw her again, when the cataract had disappeared, and her eyes were perfect. I have spoken to Mr. Powell respecting her, who informed me that he had never seen any thing the matter with her eyes; and Mr. Wray says he never did, with the exception of the cataract.

I believe it is the opinion of veterinary surgeons and authors *generally*, that cataracts never form without previous inflammation; and English authors, I think, are *totally* silent respecting the *disappearing* of them when formed.

Mr. Blaine says, "that cataract never appears, as in the human subject, as a distinct disease, independent of active inflammation of ophthalmia."

Mr. Percivall says, "that it will be found to be invariably in horses one of the consequences of ophthalmia; for, in cases where no signs of increased action have attended its apparent formation, they may be generally discovered to have existed at no very remote period preceding it;" but adds, "I do not mean to assert that it never happens without inflammation: I have heard, and so far I believe, that it does; but it certainly is comparatively a *very rare occurrence*;" thus shewing that he has not seen a case in point.

Mr. Gibson says, "that some have been foaled with cataracts or pearls in their eyes."

Now, after all that has been said, we must come to this conclusion, that here are three cases of cataracts that had existed for many months, and, in some of them, most probably for a year or two, and that have entirely disappeared, leaving the eye in a sound transparent state; and that were, in every probability, produced without the usual symptoms of that specific inflammation which is *generally* the precursor of cataracts.

I am perfectly aware that it may be said, that they may have been foaled so; but I am not inclined to believe this, as it is most probable that they would have been sooner absorbed. In my mind the depositions were of far more recent dates.

These cases, I think, will be the means of making us all take more notice of the formation of these opacities, for we have hitherto thought, that, when once we detected an opaque speck, it was a cataract, and have concluded, as a matter of course, that the horse will go blind. It now appears, that we must inquire respecting its formation; and notice particularly where it is situated; as we find, from the foregoing cases, that pearls, opacities, or what are indiscriminately called cataracts, are sometimes found upon the *capsule* of the lens, and become sometimes absorbed: but whether similar ones of the *lens* themselves do, we have not the means of deciding.

Since I have seen the two cases mentioned by me above, and also knowing that Mr. Croft's horse's eye *got well*, my opinion respecting the decision of Mr. Croft's trial is materially altered; for as Mr. Justice Taunton laid the law down, "it was *not enough* for the plaintiff to shew that the unsoundness did *most probably* exist at the time of sale; but it was incumbent upon him to prove that this *must of necessity have been the case.*" Now I have every reason to believe that Mr. Hickman did not see the horse on the 4th of July, but on the 18th of that month, which makes twenty-five days between the sale and his return; I will, therefore, put it to the profession generally, whether there was not every *probability* that it *might* have formed in that time, either from inflammation, or from some unsuspected cause; as we well know that a horse may have a smart attack of inflammation, and the eye get *clear again* in less time than ~~that~~. Why may not, then, a small opacity have formed in the same period? Again, I see no reason why a cataract may not form in the horse without inflammation, as well as it does in the human subject; and I am certain it does there, from having lately seen a medical gentleman in this neighbourhood, who did not know he had one form-

ing until his sight began to fail him, when he asked a late pupil of his to look into his eye, who discovered an incipient one in.

I, therefore, now contend, that the plaintiff did not *positively* prove that a cataract did exist at the time of sale; the witnesses merely giving, as their opinions, that it was necessary, before a cataract forms, there should be repeated attacks of inflammation; but which I think I have sufficiently proved may appear without any inflammation whatever, as most probably this did, and also the others to which I have already referred; in addition to which, it is now clear enough that cataracts may, occasionally, be absorbed. I think it behoved them to have proved *positively* that it existed at the time of sale, and not to have presumed it.

As the whole of this paper is in favour of the evidence given by Mr. Clay on the trial, I think it is incumbent on him to favour the public with the cases on which his opinion was founded, as it is a material point, especially as I am informed that such opinion did not originate with himself, or from his own experience, but from information derived from a neighbouring veterinarian.

W. A. CARTWRIGHT.

Whitchurch, Dec. 13, 1833.

THE VETERINARIAN, JANUARY 1, 1834.

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

WHEN entering on a new era in our connexion with our readers—a connexion which has been the source of much pleasure and improvement to both parties—it is necessary that we should be anxious to remove every cause of misunderstanding or coolness or distrust between us; therefore the present article will be devoted to the consideration of one or two hints which have been suggested in the most friendly manner by some of our correspondents, and which do imply some slight degree of censure.

"Studens," in the number for November last, prefers the most serious complaint. He says, referring to the Veterinary College at St. Pancras, "I think that you are somewhat quiet about this said College of ours of late; some of us think too quiet." We wish that our friend, for so we esteem him to be, had stated the specific points in which he imagines that we have "been too quiet," for we could then have met the question more fully and fairly; but as it is, we can only plead generally "not guilty." We have been "quiet of late"—we have been purposely

so;—and if we may judge of the opinion of the profession generally, by that expressed by very many of our correspondents, we have been properly so.

Let us see a little how the account stands between ourselves and the Veterinary College. So early as in the first volume of "THE VETERINARIAN," we published a somewhat laboured article, detailing what we conceived to be the deficiencies in the system of education pursued in what was then the only school on the south side of the Tweed. We deprecated the short period of study, and sketched a few of the three and five months' men:—the required residence, or attendance, is now extended to twelve months at the least. We complained of the wretched state of clinical instruction there; fifty patients occasionally disposed of in little more than as many minutes:—Mr. Sewell's round is prolonged, and more interesting and valuable; and Mr. Coleman oftener spends his two hours in pleasing and instructive conversation with the students. We spoke in no measured terms of the neglect of anatomy:—some improvement, although not to its just and imperative extent, has taken place, for the assistant demonstrator is oftener in the dissecting-room; the *horse* begins occasionally to supersede his wretched substitute the ass; and, although no regular and systematic demonstrations are yet given, an efficient anatomical school is established in the immediate neighbourhood of the College. We lamented that the fundamental principles of chemistry, and their application to veterinary medicine, were never taught:—Mr. Morton now delivers a series of instructive lectures on these subjects. We objected to the almost total silence on the anatomy and diseases of all domesticated animals except the horse:—Mr. Coleman now condescends occasionally to allude to others; and Mr. Sewell devotes a few lectures to their consideration.

These are important improvements, and must, of necessity, and at no great distance of time, lead to others; and, first among them, to the reparation of that apparent breach of faith with the student, who, for more than thirty years, was guaranteed to receive all necessary instruction in consideration of the initiatory fee. If, in the natural progress of such a profession, additional instruction is discovered to be indispensable, the initiatory fee should be proportionably increased, and, with it, would increase the respectability and the satisfaction of the class, instead of the surreptitious demand of payment after payment, not one iota of which those concerned with the institution have yet dared to announce to the public.

Much progress has been made,—as much as the most sanguine among us could have expected; and one fact every page of his-

tory confirms, that when concessions have begun to be made to the demands of increasing knowledge, they will finally be bounded by the claims of justice and truth alone. In which way, then, could we best promote the cause of our profession?—by continual agitation?—by exciting, on the one hand, unreasonable demands, and, on the other, unreasonable and obstinate opposition? or by endeavouring to unite our brethren of every party in the pursuit of science? If veterinary knowledge continues to progress, veterinary instruction must keep pace with the improvement of the times.

Besides, why should we be always called upon to fight the battles of others? We have hitherto stood foremost—we are ready again to buckle on our armour when fairly summoned; but those whose cause is most at stake should take their share in the labour, and in the sacrifice.

As to the motive to which our correspondent alludes,—"some of you being teachers yourselves, there is a principle of courtesy and honour which prevents you from bearing too hard on your brethren,"—we trust that we have not been and never shall be deficient in true "courtesy and honour;" but "Studens" may be assured that we shall never forget that "the duties we owe to our profession a thousand times outweigh any supposed ones to our fellow-teachers." As to personal "opposition and annoyance," we care little about them, except that, when the thing gets "too bad," we shall be ready to "assume the firm and determined attitude" which he recommends. In all other cases he must forgive us, if we tell him that we will continue to pursue "that smooth and even tenour of our way" which has gained us the support and good wishes of a great majority of our profession.

When we study the signs of the times with cooler heads than our young and talented correspondent, we find much reason for such a resolve. The spirit of reformation is abroad and stirring: it is awake and active in the profession of human medicine. Early in the ensuing session, the question of medical reform will be agitated in the Commons' House of Parliament. If it is agitated successfully—if those abuses of which the other profession so justly complains are redressed, our prayer will not be rejected; but if a deaf ear is turned to the voice of justice, as it regards the elder profession, the poor veterinarian will have little to expect; although he may not perhaps be content to suffer, in perfect silence, all his wrongs to be confirmed. Our young friend, notwithstanding the exuberance of his zeal, will see the necessity of a little patience.

Another correspondent, of maturer age, but in whose veins the blood continues to flow cheerily—and long may it do so—

asks of the first and last of us (according to the order of our names on the cover of our periodical), whether we mean to make application that our certificates shall be received at the Horse Guards on the same footing with those from the Veterinary College at St. Pancras. He does us the honour to say, that in his opinion "if one school possesses this principle, it should be extended to ours," and that "reason and equity demand it;" "but," he adds, "it is a bad principle that we are endeavouring to establish. It is totally inconsistent with the growing reputation of our art. It is a bad principle that teachers should have any thing to do with the granting of diplomas; for they are but men, and they are no more exempt from favouritism and prejudice than others." He then asks, "could you obtain the appointment of a certain number of veterinary surgeons, selected from the general body, with this proviso only, that they should be unconnected with any school, and who should constitute a board of examiners, before whom students, in whatever school educated, should be required to appear prior to their commencement of practice?" This is signed by "An old Practitioner;" and we know him to be so, and a good one too.

Now we will gratify our old friend thus far:—we do assure him that, whatever we may or may not wish to be done, may have done, or mean to do, that which he has stated would be the very consummation of our desires. We will not repeat the arguments, so often stated in other volumes of our periodical, of the absurd constitution of the present examining committee; but we will confess that the appointment, under the sanction of government, of a committee of veterinary surgeons in the north, and the south, and the sister kingdom, fairly chosen from the general body, and who should have power to regulate the nature of the previous education and preparation of the candidate, the length of time he should pass under the roof or immediate tuition of a practitioner, the nature and duration of his subsequent attendance on a public institution, the auxiliary sciences with which he should be more or less acquainted, and the form and extent of their own examination of him; and without a diploma from whom no person, from the date of their establishment, should be permitted to commence practice—to whom also should be delegated the power of prosecuting those who, without such authority, assumed the name or invaded the rights of veterinary surgeons;—we confess that this appears to us to include the sum and substance of veterinary reform; it embodies all that we can really want, or have any right to demand; it infringes on no just claim; *it is free from the possibility of objection.* "The old Practitioner" should see us foremost in accomplishing an object so desirable.

Let us, however, wait a little, and see how it fares with our brethren of the medical profession.

And now, good friend "Studens," shall we not be quiet for a little while longer; and, if this desirable object be accomplished, quiet for ever? True, even then, THE VETERINARIAN will be the proper depository of every student's complaint, and its Editors should, ex-officio, be the student's friend; but there will be little occasion for quarrelling then; for if all start fairly, and there is no compulsion to attend on any particular institution, the best school will be best attended, and they only will have a right seriously to complain who have been gulled by delusive representations or cheated by broken promises. It is the claim to exclusive privilege which alone gives us a right to criticise and condemn.

Our correspondent "Amicus" must not be forgotten: and to him the writer of the present article pleads guilty. The book was placed in his hands a day or two before the time of monthly publication. The historical introduction was composed with considerable care; interruptions then occurred, and the printer was impatiently waiting for the conclusion of this review, in order to introduce which other matter had been displaced. The Reviewer turned to the book of explanation—he saw that it was far more satisfactory than the short list of Gurlt—he observed that the origins and insertions of the muscles were given, and that a second name was often appended, more agreeable to our nomenclature; and he spoke favourably of the book. He had altered his opinion in a very considerable degree before he read the criticism of Amicus; and he now agrees with him, that the plates are shorn of much of their usefulness by inefficient and often unintelligible attempts at explanation. Mr. Schloss will doubtless see the necessity of remedying this.

To Mr. Allison the Editors return their cordial thanks for the zeal with which he pleaded their cause in the last number. This month's publication will shew that the correspondents of THE VETERINARIAN are not diminishing; and contributions from many friends are now on our table, which the present number would not contain, but which shall be early introduced. For the expressions of approbation, and the promises of support which almost every letter contains, the Editors are truly grateful: and for the allusions to a certain part of the last number, which are found in the "*private*" addition to the majority of the letters, one of the Editors offers his particular thanks. His apology for any undue causticity, at which one writer only has hinted, and even he has supported in his principal positions (his letter shall appear in our next number), is, that he was defending himself

against *a totally unprovoked attack*: but he promises that, henceforth, so far as he is concerned, a profession now rapidly increasing in public estimation shall not be disgraced by the violent and scurrilous manner in which its controversies are conducted.

And now, "and so say we all of us," and to all our contributors and readers, a happy new year to you.

God's benison go with you, and with those
Who would make good of bad, and friends of foes.

Y.

Extracts.

On the Diseases of the Spinal Chord and its Membranes in the Horse.

By M. Bouley, *Jun.*

(*Recueil de Médécine Vétérinaire*, 1830.)

[Continued from vol. iii, p. 594.]

We beg to apologize to our readers for so long discontinuing our translation of some of the most valuable essays which the French periodicals have for many years contained, viz. "M. Bouley's Account of the Diseases of the Spinal Chord." We are really ashamed to think that we must refer so far back as to the third volume of our periodical for the first two of these excellent papers. Mr. Chapman's case of inflammation of the membranes of the spinal chord, inserted in The Veterinarian for November, will afford an illustration of and commentary on some parts of M. Bouley's essay.—Edit.

The diseases of the spinal chord and its envelopes have not yet been sufficiently studied in veterinary medicine for it to be possible to describe the particular symptoms of each. Besides, these affections being rarely isolated, I do not think that we shall ever arrive at this precision in their diagnosis. I will add, that many of those distinctions which have been so eagerly insisted on, when inspecting the dead body, do not appear to me to deserve much notice, since the diseases of which we have treated have all pretty nearly the same character, and palsy of the hind limbs having been the constant symptom of all the morbid alterations in the spinal chord, which I have hitherto noticed.

In order to avoid useless repetitions in speaking of paraplegia, I shall describe the general symptoms common to the maladies of the spinal chord and its membranes; and when narrating any particular case, I shall reserve to myself the privilege of pointing out the particular symptoms which that case may present, and which may throw light on the diagnosis of it.

Thus, as I have already remarked, palsy of the hind limbs in the horse is sometimes the result of a traumatic lesion of the rachidian prolongation; and in a greater number of cases it is the consequence of spontaneous lesion of the spinal marrow, or the membranes which envelope it. In this last case paraplegia manifests itself in a manner almost terrifying, and without any precursor symptoms that could lead us to suspect its approach. It shews itself ordinarily during work, or immediately afterwards; it attacks animals of every age, but particularly young, strong, and vigorous horses, employed in hard work; and especially *limoniers*. The horse attacked with this disease becomes all at once lame in the hind leg without any apparent cause; and the pain is so acute, that he cannot keep himself in the same position a single instant. Presently the opposite limb is struck in the same manner: he tries to move forward, but in bending his hind limbs he walks upon his fetlocks, with a staggering pace; he gets on as quickly as he can, in order to avoid falling, which he feels to be inevitable, and finally he comes upon his haunches, and then tumbles. He makes violent and useless efforts to rise, and, should he succeed for a moment, it is only to fall again directly. Sometimes he raises himself on his haunches, and remains one or two minutes in that position; or he drags himself a few paces forward by the power of his fore limbs, which still retain their action.

The digestive functions are not sensibly impaired; and, in spite of his severe suffering, he preserves his ordinary appetite one or two days. I consider this symptom as pathognomonic, and enabling me to distinguish between spontaneous paraplegia and those fugitive paralytic affections which are caused by indigestion, retention of urine, &c., and which, I think, are always accompanied by loss of appetite. The pulse is variable: it is generally full, hard, and accelerated; sometimes small, quick, and little developed; and at other times slow to a most extraordinary degree. The breathing is quickened, because the animal torments himself so much. There is neither constipation nor retention of urine, although both the dung and the urine are passed with some difficulty. There are partial or general sweats; but no appreciable disturbance of the sensorial functions. The power of moving the hind limbs, from the first very small, soon

disappears altogether; the sensibility of the limbs does not usually undergo any alteration at the commencement of the disease; and it is only when the affection makes considerable progress that it diminishes, and at length disappears altogether. Sometimes, however, although the power of motion is lost, the feeling is unimpaired; on the other hand, I have seen the total loss of feeling, and the continuance of the power of motion: but I have oftenest observed a simultaneous loss of both faculties. The organic alteration which we afterwards meet with generally explains these different morbid appearances.

Such are the principal symptoms of spontaneous paraplegia. If a rational mode of treatment is not promptly adopted, and steadily pursued, the disease makes rapid progress, and the case becomes hopeless. Unhappily we are compelled to acknowledge that it is almost always so. The patients generally die on the second or third day; sometimes they are carried off in twelve or fifteen hours; and at other times they linger on to the sixth or eighth day. In these sad lingering cases the palsy spreads from the hind limbs to the fore ones, and attacks the respiratory muscles; the appetite ceases; the sense becomes obtuse; the pulse feeble and accelerated; the respiration quick and painful; a general sweat inundates the body; the strength gradually fails; and the animal dies after having sadly beaten himself about. If we afterwards search with attention for the causes of death, we shall almost always find them in the morbid changes which the spinal marrow or its membranes present.—I proceed to relate some cases.

CASE I.

A bay horse, entire, aged six years, was drawing a carriage at a tolerable pace, when, all at once, be became lame in both hind extremities, and without any apparent cause. He was immediately sent to my infirmary, which he reached with difficulty. Scarcely had he arrived when he fell on the litter, never more to rise. He exhibited most of the symptoms which I have just described: an abundant perspiration covered his body, and formed a vaporous atmosphere around him; his fore limbs were agitated by movements sudden and convulsive; the hind limbs were immoveable, and their sensibility was nearly gone; the pulse was accelerated, and hard; the animal often looked at his flanks; he was in violent and continual agitation, and seemed to suffer the most intense pain.

The most active antiphlogistic treatment was adopted without any success; and the horse expired about eighteen hours after the first attack.

Examination twelve hours after death.—The thoracic and

abdominal viscera were nearly in their natural state; the brain was sound; and the spinal chord presented no morbid change until we arrived at the dorso-lumbar region; we there remarked that the adipose tissue which attached the membranes to the vertebræ contained a great quantity of effused blood. The dura mater was very red, and the spinal sheath enclosed a coloured fluid; the sub-arachnoid tissue was gorged with blood; and the pia mater, highly injected, formed a well marked arborization on the chord. The colour and consistence of the spinal marrow were natural.

CASE II.

A bay horse, entire, five years old, of a strong constitution, drew a load of plaister to Paris, at ten o'clock in the morning of the 12th of June, 1824. When he arrived at his journey's end, the driver perceived that he could scarcely stand upon his hind limbs. He hastened to unharness him, and endeavoured to lead him to a neighbouring stable, but he could not accomplish it, for the animal fell on the pavement, and was not able to rise again. Having contrived to place him on a little cart, he was drawn to my infirmary. The moment he arrived I recognized the symptoms of the most complete paraplegia. All the means which I adopted were useless; the disease made rapid progress; and at the expiration of thirty hours the animal died, after having experienced the most acute suffering.

Examination twenty-four hours after death.—The organs enclosed in the splanchnic cavities were sound; the spinal chord was altered at the lumbar region alone. The dura mater, and the fatty tissue which surrounds it, were inflamed; the fluid contained in the vertebral sheath was in greater quantity and more highly coloured than usual; the pia mater was very highly injected, and the lamellæ which separated it from the arachnoid membrane were filled with effused blood; the spinal marrow was a little softened, its medullary substance presenting some red points; the grey substance had undergone no alteration.

CASE III.

Half an hour after having taking a heavy fare to La Villette, and as he was returning at a good pace to Paris, with the empty carriage, a grey, aged, entire horse, was seized with pain in the left hind leg, and was forced to stop all at once. Presently the right limb was attacked in a similar way, and the horse had decided paraplegia. The most assiduous care could not arrest the progress of the disease, and in twenty-two hours after the attack the animal died.

Examination ten hours after death.—The abdominal and tho-

racic viscera and the brain were sound; and the spinal marrow offered no remarkable lesion, except at the lumbar region. The fluid contained in the vertebral sheath was abundant, and highly coloured; the arachnoid membrane reflected a red colour; the pia mater was highly injected; and the sub-arachnoid tissue was gorged with blood; the spinal marrow was of its usual consistence and colour, except that there were, here and there, some red points in the medullary substance.

CASE IV.

In the course of the night between the 8th and 9th of February 1825, I was desired to attend to a grey horse, entire, seven years old, which, during a journey to Paris, had been seized with palsy of the hind limbs.

He was extended on the litter; he seemed to suffer little; and was anxious to eat. His hind limbs were entirely deprived of feeling and the power of motion; but neither the breathing nor the circulation was disturbed. In spite of all the means adopted, he remained in the same state until the fifth day, when the appetite disappeared; fever was developed; the strength rapidly sunk; and the animal died on the eighth day.

Examination twenty hours after death.—There were some marks of inflammation on the abdominal viscera, and the right lung was gorged with blood, but the brain was in its natural state. The spinal marrow was softened and semi-fluid from the tenth dorsal vertebra to the lumbar enlargement, and including it. The pia mater was slightly injected; but the other membranes were sound.

CASE V.

An entire draught horse, five years old, who, two hours before was affected with incomplete palsy of the hind limbs characterized by the total want of the power of motion but the feeling remaining perfect, was committed to my care.

These remarkable symptoms remained for three days, when the animal died.

Examination twenty-four hours after death.—Slight traces of inflammation were found over all the abdominal viscera; the lungs, the heart, and the brain, were sound; the spinal marrow was in its natural state until the last dorsal vertebra, but from that point to the entrance of the sacrum the membranes were highly inflamed; all the inferior part of the spinal marrow was softened and semi-fluid, while the superior part had undergone no change. The pulp of the lumbar nerves, and of the first pair of sacral nerves, had little consistence, and their membranes were red and injected.

CASE VI.

In the month of June 1822, complete palsy, cause unknown, suddenly attacked an entire sorrel horse, five years old, of good constitution, while he was at work. Nothing could arrest the rapid progress of the disease; and the animal died forty-eight hours after the first attack.

Examination six hours after death.—This was conducted with the assistance of my unfortunate friend, M. Girard, jun. We found some traces of inflammation on the abdominal viscera, particularly on the liver and the stomach; the lungs were black, and the right cavities of the heart very red; the brain presented no lesion; but the spinal marrow, from the middle of the dorsal region to the sacrum, had its envelopes injected, and its pulp softened and semi-fluid, particularly at the lumbar region.

CASE VII.

A grey mare, six years old, was, on the 19th of January 1828, suddenly seized with palsy in her hind limbs, immediately after she had worked two hours, without seeming to ail any thing. The disease ran its course with frightful rapidity, and she died fourteen hours after the commencement of the attack.

Examination twelve hours after death.—The lungs were black, and gorged with blood; the heart enlarged, and discoloured; its right cavities very red; and the brain in its natural state. A red fluid had spread itself between the pia mater and the arachnoid membrane; these two membranes were injected from half way down the dorsal region to the entrance of the sacrum; the spinal chord was soft and semi-fluid through the whole extent of the sacral region. Professor Dupuy assisted me in this examination.

CASE VIII.

On the 25th of January 1828, an aged, grey, draught mare was brought to me, who had all at once been struck with palsy. She died in less than thirty hours.

At the examination, made in company with my colleague, M. Leblanc, I found the same lesions as in the last case; only, that the redness of the spinal membranes, and the softening of the spinal chord, were more evident.

It would be easy for me to increase the number of these facts, but they all possess a very similar character, and relate to morbid changes of the spinal chord in the dorso-lumbar region; they would therefore throw no farther light on the history of these maladies. Those which I have described are sufficient to demonstrate the frequency and the dangerous character of these affections of the spinal marrow.

[To be continued.]

Miscellanea.

THE ARABIAN.—*A Sketch from Nature.*

ALL breathing things delight in the green world!
Behold in yon small paddock a fair steed,
Arabian shaped, sleek limbed, eyes that like fire beam—
In action graceful as the swimming swan—
The mould and model of his kind—as proud
And glorious a thing as eyes can see.
Fixed, statue-like, he stands, like Parthian stone,
Chiselled by art to the similitude
And attitude of life! But greater hands
Than human hands have made him what he is—
The beautiful, the buoyant thing, whose speed
Could tire the shadows coursing o'er this ground;
A creature that we love, while to our will
We bend his nature down, and teach him fear.
—But he must leave the field in which he fed,
And joyful ran his own impulsive race.
See where the groom, with sieve thin spread with corn,
Presented oft, oft seen, as oft refused
(For the shy creature knows that the decoy
Covers the thralling rein, and more prefers
Freedom uncurbed, and his own wanton play),
Comes now to snatch him from his heaven of ease.
He stands a moment only, as if caught;
The coaxing groom believes his task is done,
And wonders where his freakishness is fled.
Almost his hand has clutched the dangling mane—
Almost the rein is slipped upon his head,
When, ere an eye can turn, with rampant prance,
Short, snuffling snort, and instantaneous spring,
As if in mockery of the powers of man,
Away he flies, swift as an eagle shoots
The shrinking air, and scours his prison bounds,
Till the air thunders as his frantic feet
Strike with strong clatter on the hollow ground.
—Breathless, but patient, still the dodging man
Follows the dodging beast, sooths the coy thing,
Calls him by name, whistles, and lastly, swears,—
"That *first* infirmity of noble *grooms*:"—
Now reddens with fierce rage, and now, once more,
Comes whispering wheedling words into his ear.
He knows and hears him, and seems fairly won;
Too sure he has him, and too slow when sure—
He's gone again, straight as an arrow flies,
As hopeless to pursue. Down drop the sieve
And gingling rein; and now the savage whip
With shrilly threatenings thrills along the air:
He heeds it not, and still his race he runs.
Now, tired of play, or else instinctive fear,
Or more instinctive love, tames the wild thing,
And makes him docile. He has had his will,
And now resigns the mastery to man;
For suddenly he turns in his mid flight,
And stands a prisoner, willing to be bound.

New Monthly Magazine.

Annual Report of Diseases in Mr. Youatt's School,

From Dec. 21, 1832, to Dec. 20, 1833, inclusive.

It is with some reluctance that Mr. Youatt obtrudes this statement of a comparatively limited practice, and hopes that he shall soon see it accompanied by, or, in truth, superseded by the more extensive and valuable records of his friend and coadjutor, Mr. Dick:—and why should the transactions of the Veterinary College be excluded?

Such records of the comparative frequency of certain diseases—the periods of their appearance—the maladies with which they seem to be associated, or which at the same time are prevalent in the same or in different species of animals—their connexion with the state of the weather (which shall not be neglected in the next report)—these are circumstances from which many useful inductions cannot fail of being made;—but they must be records of schools, for as such alone can they with perfect propriety be brought before the public, or, from the number of persons cognizant of the truth or falsehood of the facts, be secure from sophistication.

	Jan.		Feb.		March		April		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.		Total	
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† All the diseases of the feet that are recorded were of a serious nature.

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	18	63	17	72	24	58	24	83	28	77	37	115	38	98	24	65	30	83	35	46	15	49	11	54	306	8

	Jan.		Feb.		March		April		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.		T
	H.	D.	H.	D.	H.	D.	H.	D.	H.	D.	H.	D.	H.	D.	H.	D.	H.	D.	H.	D.	H.	D.	H.	D.	F
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Sallenders	—		—		—		—		1	0	—		—		—		1	0	—		—		—		
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Secretion of milk	—		0	1	—		—		—		—		0	2	—		—		—		—		—		
Separation of hoof	—		1	0	—		—		—		—		—		—		—		—		—		—		
Sitfast	—		—		—		—		—		—		2	0	1	0	—		—		—		—		
Spavin	—		1	0	—		—		1	0	—		—		—		1	0	1	0	—		—		
Spinal cord, inflammation of	—		—		—		—		—		—		—		—		—		—		1	0	—		
Spinal injury	—		—		—		0	1	—		1	0	—		—		—		1	0	—		1	0	
Splenitis	—		—		0	1	—		—		—		—		—		—		—		—		—		
Sprains	3	1	6	1	1	0	1	0	5	0	3	1	1	0	2	1	7	0	5	0	1	0	1	1	3
Stiffness	—		—		—		—		—		—		—		0	2	—		—		—		—		
Stifle lameness	—		1	1	0	1	0	2	0	2	0	3	0	1	—		0	1	0	2	—		—		
Strangles	—		—		—		—		1	0	1	0	1	0	1	0	—		—		—		—		
Strangulation	—		—		—		—		—		1	0	—		—		1	0	2	0	—		—		
Stricture of the bowels	0	2	—		—		—		—		—		—		—		—		—		—		—		
Superpurgation	0	1	—		0	1	—		—		—		1	0	—		—		—		0	1	—		
Surfeit	—		—		0	1	—		—		—		—		—		—		—		—		—		
Swallowing foreign bodies	—		—		—		—		0	1	0	1	—		—		—		—		—		—		
Swelled legs	—		1	0	—		—		1	0	—		2	0	—		—		1	0	—		—		
Teeth, diseases of	—		0	6	1	2	0	2	0	3	0	2	1	0	—		0	1	1	2	—		—		
Tenesmus	—		0	1	0	2	0	2	0	1	0	1	—		—		—		—		—		—		
Testicle, scirrhous	—		—		—		—		—		1	0	—		—		—		—		—		—		
Tetanus	—		—		—		0	1	—		1	0	—		—		—		—		—		—		
Thrush	2	0	1	0	1	0	1	0	—		—		—		1	0	—		—		1	0	—		
Thyroid glands enlarged	0	1	0	2	0	1	0	1	0	2	0	1	0	1	—		0	1	0	2	0	2	—		
Tread	1	0	1	0	—		—		—		—		—		—		—		—		1	0	—		
Tongue, substance in	0	1	—		—		—		—		—		—		—		—		—		—		—		
Tumours	—		—		1	0	—		0	1	0	3	0	3	1	0	0	1	—		—		0	2	
Do. scirrhous	0	2	0	1	—		—		0	4	0	1	0	4	0	1	—		—		—		0	1	
Vomition	—		0	1	0	1	—		—		—		0	1	—		—		—		—		—		
Vomiting blood	—		—		—		—		0	1	—		—		—		—		—		—		—		
Worms	0	4	0	3	0	2	0	5	0	1	—		2	2	2	3	0	3	0	2	1	2	1	5	
Wounds in feet	—		—		—		2	0	—		1	0	1	2	3	0	—		—		1	0	—		
Wounds, severe	—		—		0	2	—		0	1	0	2	0	3	0	2	1	3	1	2	0	2	0	2	
	24	81	30	94	29	80	28	105	41	99	49	137	53	120	38	75	43	95	47	60	22	60	15	67	42

To these might have been added ninety-four other cases of domesticated animals, oxen, sheep, swine, cats, rabbits, birds of various kinds; but no class of these was sufficiently numerous for any satisfactory conclusion to be drawn from a record of their maladies. Reference might also have been made to 144 cases of disease in untamed animals in almost every species, which the pupils had occasional opportunities of observing, and which often afforded interesting illustration of the different character of disease in animals of different structure, food, and habits—making a total of 1748 distinct cases.

Some observations on this list of cases will be given in the next number.

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MR. YOUATT'S VETERINARY LECTURES,

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Continuation of **LECTURE XXXVIII.**

The Divisions of the Nervous System. The Animal Nerves of pure Sensation and pure Motion.

Divisions of the Nervous System.—One division is plain and palpable—*the animal* and *the organic*—that which is concerned in the conveyance of impressions to the brain, and volitions to the muscles; and that which is connected with respiration, circulation, digestion, and life itself. The first six of the cerebral, the eighth (portio mollis), and the twelfth (the lingualis), and all the spinal nerves, are those of *animal* life. All the others, except part of the seventh (portio dura), are nerves of *organic* life. The animal nerves admit of a simple subdivision into those of *pure sensation*, concerned alone in transmitting impressions to the brain, as the first, second, and eighth; or *pure motion*, conveying the volitions of the mind; as the third, fourth, sixth, and twelfth (lingualis)—or, in accomplishing both purposes, as the fifth pair within the cranium and all the spinal nerves. The division of the organic nerves is not so evident; we have, however, plainly enough the simple motor-organic nerve in the ninth (the glosso-pharyngeus), the eleventh (the spinal accessory), and the phrenic—and we shall cautiously inquire whether we do not find it also in the tenth (the par vagum), and the chemical and vital one in the ganglial nerve; while, plainly enough, the seventh pair occupies a neutral ground, or belongs both to animal and organic life—it is both the *voluntary and the organic motor nerve of the face.* When we have made ourselves masters of this theory of the origins and functions of the nerves, we shall not have much difficulty in unravelling many of their anastomoses, and comprehending the wise and benevolent purposes that are accomplished by them.

We will commence with the animal nerves, and, first of all, with those of pure or peculiar sensation.

The Olfactory, or First Pair of Nerves.—The nerve which

first presents itself at the base of the brain, if we commence anteriorly, is *the olfactory nerve.* It arises partly from the *corpus striatum;* but a medullary tractus, terminating in it, and evidently giving one origin to it, may be traced to the base of the *corpus callosum.*

Its Character as a Nerve of peculiar Sensation.—Whether we trace its origin to the corpus striatum or the corpus callosum, it is derived from the *superior portion* of the medullary matter at the base of the brain—that which would be a continuation of the superior surface of the spinal chord if so far prolonged. If we follow its root to the corpus callosum the olfactory nerve is evidently referrible to the *centre* of that superior surface, and there is nothing inconsistent with the same derivation, when we attribute it to the corpus striatum. It proceeds in a manner *bodily* from the substance of the brain—it is an apparent *prolongation of the medullary matter of the brain.*

Comparative anatomists should not describe it as a mere mammillary process—"the ashen-coloured termination of the brain abutting upon the ethmoid bone." Although the nervous chord is not separated from the brain to so great an extent as that of the optic or even the auditory nerve, and not nearly so much as we find it in the human subject, yet it has decidedly left the brain before it reaches the cribriform plate.

Its course is short, and it has not a single anastomosis. I would beg you to pay attention to these peculiarities, these characteristics (as I shall by-and-by, be justified in calling them) of a nerve of *peculiar sensation.* Its minute ramifications, I have said, are affected only by the odoriferous particles of bodies.

Size of the Nerve.—Observe the development of this nerve, bearing a beautiful proportion to the necessities of the animal. First, compare it with the same nerve in man—in him simply connected with pleasure—in the brute with life itself. In a brain not more than half the size of that of the human being, namely, the brain of the horse, the olfactory nerve is four times as large as in man. Compare its bulk in our different domesticated animals. In the horse it is large, for in a state of nature it affords his only warning against poisonous plants; but, almost all over the world, he has become our stabled servant, comparatively rarely sent to collect his own nutriment amidst the herbage of the field, and having the greater part of his food provided for him. The ox is oftener driven to shift for himself, or, if worked by day, he is usually turned out at night, and needs a somewhat acuter sense of smell. Observe, that although his brain is but little more than half the size of that of the horse, the olfactory nerve is nearly as large. In the sheep and swine it is comparatively as large as

in the ox, or even more so; and in the dog you cannot fail of remarking its still greater comparative bulk.

Peculiarities about it.—The olfactory is, next to the fifth, the largest of the cerebral nerves, and it is the softest in its texture; nevertheless its fibrous structure has been demonstrated, and it is the excessive looseness and thinness of the neurilema that gives it its pulpy appearance. It has a singular cavity in it, the use of which I am unable to state. That cavity is a prolongation of the anterior cornu of the lateral ventricle; it terminates, however, in a blind pouch before the nerve reaches the ethmoid bone, and there is consequently no channel by which, as was formerly supposed, any fluid can be conveyed from the brain into the nose.

Termination.—In company with, and under the real mammillary process, it abuts upon the cribriform or thin perforated plate of the ethmoid bone, and sends its pulpy fibres through it. These are visibly spread over the upper part of the septum and superior turbinated bone, and which probably extend over the whole of the nasal cavity: of this, and of the sense of smell, I have already spoken when treating of the respiratory system.

The Olfactory Nerves in Birds.—In our occasional patient, the feathered biped, the olfactory nerve comes nearer to a mammillary process, for it arises from the very point of the anterior termination of the brain, and seems to be a mere continuation of it. Having left the cranium, it enters into a bony canal, and so passes through the orbit which interposes; and it is finally distributed, not on the ethmoid bone, for that is in a manner wanting in the bird, but on the pituitary membrane covering the superior *conchæ* of the nose.

The Optic, or Second Pair of Nerves.—On the crura cerebri, when they first appear at the base of the brain, there are seen two prominent medullary chords winding their way over the crura in a direction inwardly and anteriorly. They first emerge from under the hemispheres, opposite to the corpus albicans, and they meet each other immediately anterior to the infundibulum and the pituitary gland.

Their Character as Nerves of a peculiar Sensation.—The medullary chords of which I have just spoken—the *tractus optici*—can be traced to the *thalami nervorum opticorum* in the centre of the brain; they are, in fact, a continuation of the thalami; or the thalami contract, and are prolonged into these medullary chords. I have also said that they are connected by medullary striæ with the corpora quadrigemina, and particularly with the nates. Now the thalami and the nates evidently occupy that portion of the base of the brain which would corre-

spond with the *superior surface of the spinal chord;* and they occupy a *central* situation upon that surface. The optic nerves are also a palpable *prolongation of the medullary substance of the brain.* The course is *somewhat longer* than that of the olfactory nerve, but through the whole of that course *they have not a single anastomosis.* They are also nerves of *peculiar sensation,* and their minute ramifications are affected only by the particles of light.

Peculiarities of the Optic Nerves,—Their Decussation.—I have shewn you these medullary chords, winding their way over the crura, and meeting at the centre, and not only meeting, but apparently decussating—crossing. There is a certain identification of medullary matter of the two nerves, to secure the more perfect discharge of their function—to assist experience in correcting the errors which would arise from the somewhat dissimilar impressions made, or the pictures (if we so dare to call them) painted on the two retinæ, and to ensure perfect and distinct vision. The impression made by the odoriferous particles of bodies on the two nostrils, or the two olfactory nerves, is, in a state of health, precisely the same; the vibrations of the air, as they reach the tympanum of the ear on either side are the same; but from the construction of the organ of sight, the picture on each retina must differ, and that very materially with regard to a near object. Look at any thing first with one eye and then with the other, and you will understand what I mean. This partial mingling of medullary matter in the two nerves was probably designed to prevent, or to remedy, the confusion of vision which would otherwise result. We have, however, abundant proof that there is no actual decussation. This brain was taken from a dog that had been blind in the right eye for several years. Observe how the nerve on the right side is shrunk, and what a curious semi-transparent hue it has assumed. Our principal patient, the horse, is sadly exposed to inflammation of the eye, which too often destroys the sight: but there is this peculiarity about the disease, that when blindness is produced in one eye, the other is spared for a long time, and often for life. If we examine the brain of one of these horses, we uniformly find the nerve on the blind side shrunk: it obeys the law which governs every other part of the frame, and when it is no longer useful, it gradually withers away. It has been long settled, I believe, among human anatomists, that there is no decussation of the nerves. The examination of some Russian criminals determined the matter. Theft was in some part of that vast empire punished with the loss of an eye for the first offence, and death for the second. Some pirates who had suffered the first penalty, were

afterwards convicted of a second offence, and executed; and the nerve on the blind side was shrunk in every one of them. In birds, the optic nerves, which are exceedingly large, manifestly decussate; and in fish, and particularly in those with a bony skeleton, they cross each other without mingling at all.

Their Fibrous Structure.—The fibrous structure of the optic nerve is sufficiently evident in all our quadruped patients, and these fibres are so symmetrically arranged as to leave a canal in the centre of the nerve, which had been observed by some old anatomists, but the function of which had been misunderstood. It contains *the central artery of the retina,* derived from the ophthalmic artery, and which penetrates through the dura mater after the nerves leave the cranium, and enters with the optic nerve into the globe of the eye, for purposes which will be described when we treat of vision. This canal also contains the central vein of the retina.

The Reticulated Structure of the Optic Nerve.—When, however, I speak of symmetrical arrangement, do not misunderstand me. I do not mean to say that the exact parallel direction of these fibres can always or scarcely ever be traced. It would seem to be necessary in such a nerve as this, of peculiar sensation, that there should be an intercommunication of nervous influence and matter through its whole extent, otherwise accident or disease might, oftener than it does, cause strange confusion in the impression conveyed; therefore there is a continual exchange of minute branches going forward between the fibrils in every direction; in some nerves this reaches through their whole extent, in others it is more plainly to be traced in certain parts, and occasionally it is carried to such an extent, that the interior of the nerve presents only a complicated reticular appearance. It is so here: although we can trace the central canal plainly enough, the interchange of branches is so numerous, that the true parallel direction of the fibres cannot be distinguished.

Termination of the Optic Nerves.—Each nerve, after having separated from its fellow, pursues its course on its own side, escapes through the foramen opticum, and enters the cavity of the orbit: it there continues its path obliquely, penetrates between the muscles, and, particularly surrounded by the retractor muscle, reaches the inner and inferior and posterior part of the eyeball, the coats of which it penetrates, and, entering the globe of the eye, it expands over the choroid coat, and forms the retina.

Sheathed in Dura Mater.—The dura mater usually quits the nerves as they emerge from the cranium, and they afterwards pursue their course surrounded and defended by their own neurilema:

but the optic nerve is an exception to this rule, for the dura mater continues to encircle it until it reaches the outer or sclerotic coat of the eye. This, according to some, is for the purpose of forming the sclerotic coat, which certainly bears considerable resemblance to the dura mater; while the pia mater, according to the same anatomists, is expanded within the globe of the eye. More of this when we treat of the structure of the eye: at present I will only remark, that the difference in situation and length of course, between this and the other two nerves of peculiar sensation, and the difference in function too, will sufficiently account for this prolongation of the dura mater. It is necessary that the impression or intelligence conveyed by a nerve of peculiar sensation should be distinct and pure. The olfactory, the moment it quits the cranium, ramifies upon the membrane to which it is destined. We shall presently see that the auditory nerve is defended by a bony canal until it arrives at the labyrinth of the ear. Nothing can cause confusion in the impressions which are conveyed along these nerves; but the optic nerve has to travel through the orbit before it reaches its point of destination, and is encircled by muscles of strong and rapid action: this dense covering, therefore, is necessary to protect it from that compression which might occasionally interfere with the perfect discharge of its function.

The Optic Nerve in Birds.—The structure of this nerve is singular in birds. The fibrous conformation is evident; but these fibres are curiously collected into laminæ in birds of prey, and I think I have seen something like it in a few of those which we have partially domesticated, and particularly in the pheasant. The nerve cannot be dissected, as in the quadruped, into a collection of fibres more or less numerous and complicated, but into a congeries of leaves; it seems like the folding of one continuous membrane, and the retina is the expanding of the plaits. We can connect this, as we shall have to do many other peculiarities in the eye of the bird, with the almost inconceivable acuteness of sight in them and in birds of prey particularly, of which natural history affords us a thousand proofs.

The Auditory Nerve.—This nerve is the eighth in order, reckoning anteriorly posteriorly. English anatomists have termed it the *portio mollis* of the seventh pair: I will venture, following the example of most continental anatomists, and for reasons that shall be stated hereafter, to call it simply the auditory or eighth pair of nerves.

Its Character as a Nerve of peculiar Sensation.—I find it on the floor of the fourth ventricle, which is not only a prolongation but may almost be said to be the *superior surface* of the spinal

chord. I trace it from the slit of the calamus scriptorius, and therefore from the *centre* of the surface. Its pulpiness and transparency render it now and then a little difficult to follow, and we often mutilate or lose it in the dissection; but you here plainly perceive it passing down the side of the medulla oblongata, meeting the seventh nerve (the portio dura of the seventh), and then, in union with it, taking an outward direction, and entering the *foramen auditorium internum*. Its course there is short: it soon abuts upon a cribriform or perforated plate of bone closing the passage, through which it passes, and then, dividing into various portions, spreads itself over the internal chambers of the ear, while there is not throughout the whole of its course *one anastomosis*. Its root cannot, like the first and second nerves, be traced to distant parts, for it at first appears on that track of medullary matter to which the others are ultimately referred. It does not seem so much a prolongation of a part of the brain, and yet it springs as it were, *bodily*, and *at once*, from the floor of the ventricle. Human anatomists have spoken of fasciculi of fibres proceeding from above and below to form the root: something like striæ I have seen; but the fibres, if they do exist, are indistinct.

There is a circumstance respecting one of the divisions of this nerve, that we have not observed in any portion of the first or second nerves, namely, that those fibres which go to the trumpet-like extremities of two of the semicircular canals, pass through a little knot or ganglion. I must not, at present, draw any conclusion from this isolated fact, but I shall have hereafter to remind you of the ganglion on a part of the eighth nerve of peculiar sensation. The minute ramifications of this nerve are affected only by the vibrations of the air.

Comparative Bulk of the Auditory Nerve.—When I come to treat of hearing, I shall have to describe many peculiarities, accounting for the greater acuteness of this sense in the quadruped than in the human being, arising from the external ear—the tympanum, the ossiculi, &c.; but at present I must only point out to you, in each of the brains before us, the greater bulk of the auditory nerve compared with that in man; on the other hand, the adaptation of the human ear to the various modulations of tone, will be an interesting subject of inquiry.

Comparison of these Nerves of peculiar Sensation.—Now then, gentlemen, let us for one moment recapitulate. We have examined the three cerebral nerves of *peculiar sensation*—those of smell, sight, and hearing. We have traced each of them to that portion of the medullary matter at the centre of the brain, which answers to, or may be considered as a prolongation of, the surface of the spinal chord;—we have further traced them to the centre

of that surface ; we have observed, that they seem to be prolongations of the substance of the brain, or to spring bodily from that organ, and that through the whole of their course they have no anastomosis. To the two first of these peculiarities I shall hereafter recall your recollection, when I have to speak of the relative situation of nerves of certain functions. The prolongation of the substance of the brain—the long root that can be traced deep into the brain—seems natural enough, when we consider that from these three nerves the animal derives almost all his knowledge of surrounding objects—all the materials for thought and improvement. It seems reasonable that these impressions should be conveyed securely and deeply, there to be preserved, arranged, and compared. They are as much identified with the mind and with animal life, as the well-protected organs of the thorax are with the inferior organic principle ; and the wisdom and benevolence of the arrangement by which these impressions of smell, and hearing, and sight, are preserved distinct and pure, and by which no anastomosis with other nerves is permitted, needs no illustration of mine. But I proceed to other nerves, differently situated and of different function, viz. the nerves of pure motion.

The Motores Oculi, or Third Pair of Nerves.—About the middle of the crura cerebri in the horse (and to this animal, if an especial exception is not made, all these anatomical details refer), and rather nearer to the corpus albicans than to the pons varolii, the third pair of nerves take their origin. They seem to rise *superficially* from the crura cerebri ; they cannot be traced at all into the substance of the brain, except in a way that I shall presently notice, and they are clearly referrible to another surface of the spinal chord, or its supposed prolongation—the *inferior* one. Let me here remark, once for all, that from the difference of the attitude of the human being and the quadruped, the *anterior* surface of the spinal chord in man, is the *inferior* one in the brute ; and the *posterior* one in the biped, is the superior one in the quadruped. These nerves spring from the *central* column of the inferior surface—that track which I have already seen under the pons varolii, and along the crura cerebri. They do not, however, rise *bodily* from the crura, but by *several minute fibriculi ranged in a line,* following the course of this medullary track. These fibriculi approximate to each other, and unite either before they penetrate the dura mater, or as they are leaving it, and form a nerve. This is very different from what we have observed in either of the nerves of peculiar sensation.

Course of the Nerve.—The motor oculi takes its course obliquely across the crus cerebri, and winds downwards, and enters the

cavernous sinuses, and escapes through the foramen longum orbitale into the orbit;—there it divides, and the smaller branch goes to the levator oculi, while the larger subdivides, and goes to all the other muscles of the eye, except the superior oblique and the abductor, for the purpose of moving the eye in its socket. Then it is *a nerve of voluntary motion.*

Its Anastomoses.—As we follow its course, we observe another circumstance in which it differs from either of the sensitive nerves, —*it connects itself with other nerves* It communicates with minute branches of the ophthalmic division of the fifth pair, and more particularly unites with them to form that curious ganglion, *the ophthalmic,* whence the iris derives its supply of nervous influence. I enter not into the cause of this yet. We shall know more about it by-and-by, for a thousand anastomoses will come before us, the great utility of which will be evident on the slightest inspection; but I content myself with pointing out to you how far we are departing from the character of a nerve of peculiar sensation.

The Pathetici, or Fourth Pair of Nerves.—I feel considerable difficulty in classing this nerve. It goes to the trachealis or superior oblique muscle of the eye, and governs its motion; but whether it is a nerve of pure voluntary motion, or merely associating the motion of the eye with some organic function, and probably that of respiration, I am not assured. It arises from a singular part of the brain,—from the crus cerebri at the base of the testes, and, consequently, from the superior surface of the prolongation of the spinal chord; but it does not arise either from the centre or the side of the crus—more inclining, however, to the latter than to the former;—and when I make a longitudinal incision through the cerebellum, and lay open the whole of the fourth ventricle, I plainly see that it does spring from that portion of the crus which may be considered as a possible prolongation of the lateral column of the medulla oblongata. In this respect it differs from the voluntary motor nerve which I have just considered, and from every other voluntary motor nerve of the brain or the spinal chord. In addition to this, it curiously winds its way through the other nerves, and proceeds to this single muscle without an anastomosis; nor can I trace to the trachealis muscle any fibre from any voluntary motor nerve. This is very singular; for with regard to every other muscle (the visceral ones excepted), if there are communications from an organic nerve to associate the action of that muscle in the discharge of some vital function, there are also communications from some spinal cerebral nerve for the purpose of voluntary motion. It arises by filaments, two of which I can plainly trace.

Difficulty about the Fourth Pair of Nerves.—Sir Charles Bell, to whom, more than to any other physiologist, we are indebted for our knowledge of the nervous system, considers this as a respiratory nerve. He does so partly from its situation, in which I confess I am a good deal disposed to acquiesce with him; but I do not understand the function which he assigns to it, of *relaxing*, not *contracting*, the trachealis muscle, and thus causing the eye to roll upwards, under the superior lid, in every forcible effort of respiration, as sneezing or coughing, and so tending to the security and preservation of the eye. I can form no clear conception of this *relaxation* of a muscle by the *direct* agency of the nerve that governs it; nor can I see the great danger to which the eye is exposed in more than usually forcible respiratory efforts, nor a purpose sufficiently important to lead to the introduction of a separate nerve, and from so singular an origin. I must therefore, at present, class it with the nerves of voluntary motion; I know it to be a voluntary motor nerve as it regards the usual action of the superior oblique muscle. There is, however, something about this nerve which I do not understand, and with which I am not quite satisfied. I shall enter a little more into this, and you will be better prepared for the inquiry, when the muscles of the eyeball come in order before us.

The Abducentes, or Sixth Pair of Nerves.—This nerve arises from a transverse sulcus on the medulla oblongata, between the pons varolii and the proper motor origin of the seventh pair; and it is clearly referrible to the central column of this prolongation of the spinal chord. Therefore we find it on the *inferior* surface of the spinal chord, and springing from its *central* column; and when we look more attentively at it, we can trace *the fibriculi springing in a line* from which it derives its origin, and uniting to form it. We trace it to the cavernous sinus, and through the foramen lacerum into the orbit, where it divides: some branches of it are distributed over the retractor muscle, a muscle peculiar to quadrupeds, answering the purpose of hands in withdrawing the eye from danger, if that danger cannot be warded off; but the main bulk of the nerve goes on to the rectus externus or the abductor of the eye, by means of which the eye rotates outwardly: this branch is also a kind of antagonist to the rectus internus and the superior oblique. Then I can clearly understand that this is *a nerve of voluntary motion.*

Its Anastomoses with the Great Organic Nerve.—There is a peculiarity about it, however, which I do not understand. There are *some minute anastomoses with the other motor nerves of the eye,* and with the ophthalmic branch, that I can comprehend; but there is a branch, and a very considerable one, given to each

of the abducentes from the *great organic nerve*. It evidently goes not from the sixth to the organic, but it comes up in bulk through the base of the skull, and unites with the sixth. You will, by-and-by, be assured, and you will understand the reason of it, that this organic nerve freely anastomoses with every other nerve and every part; but the purpose for which these considerable branches are sent to the sixth is not yet apparent. For the present I leave this part of our subject, again reminding you that this abducens is a kind of antagonist of the superior oblique, the character of whose nerve a little puzzled us. If it should prove to be an organic nerve, why here is plain and palpable union with the great organic to correspond with it.

The Linguales, or Twelfth Pair of Nerves.—Still proceeding posteriorly, and in the same track, we find the lingualis, the last of the simple nerves of the cranium, arising also from the *inferior* surface of the medulla oblongata—arising also, but not so decidedly from the *central* column, and *formed from fibriculi springing in a line.* Here I begin to have a clearer conception of that of which I had not a trace in the nerves of pure sensation;—this nerve is scarcely formed before it anastomoses, and by many a filament with the cerebro-visceral—its union with the sub-occipital and the first cervical cannot escape my observation; and when I dissect it carefully, and especially its descending branches, I find it allied with the second cervical, with the spinal accessory, and with the great organic nerve—its superior branch also unites with the gustatory branch of the fifth in endless anastomoses, making a complete plexus, or network, of nervous filaments. I need not be told that there are many important offices to be performed by this little agile member the tongue, and *I must call in the aid of many a neighbouring muscle, or almost all of them,* in order to effect these purposes. After all these anastomoses, the main branch, accompanied by the fifth, penetrates into the substance of the tongue, pervades every part of it, and is lost in innumerable minute ramifications. This, then, is plainly *a nerve of voluntary motion.*

Characters of the Cerebral Nerves of Voluntary Motion.—And now, gentlemen, after a somewhat long and intricate, yet I trust not quite unpleasant journey, we have arrived at a resting place. This is the last of the pure voluntary motor nerves; and, comparing them together (leaving out at present the fourth, with which I have said I scarcely know what to do), we obtain these characters of the cerebral nerves of voluntary motion, which may guide us materially in our future inquiries—*they arise from the inferior surface of the prolongation of the spinal chord, and from its central column, by numerous fibriculi attached in a line to the surface of the brain, and they anastomose freely with neighbouring nerves.*

ON THE USE OF THE SECALE CORNUTUM (ERGOT OF RYE) IN RETENTION OF THE PLACENTA, AND PROTRACTED LABOUR.

By Mr. G. W. Allinson, *Idle, Yorkshire.*

In compliance with the desire expressed by your talented correspondent, Mr. Simpson, I beg leave to relate two cases, and the result of my experience in the use of the ergot of rye.

Being aware of its prompt and powerful action on the uterine system of women, and without any data (to guide me) as to its effects on quadrupeds, I felt the necessity of great caution in exhibiting so energetic a medicine. I tested its powers by administering it in cases of retention of the placenta, gradually reducing the quantity of the articles I had usually given, and increasing in like manner the ergot of rye, until I was satisfied that I might rely on it alone in a great majority of cases.

The secale cornutum, in the vigour and energy of its action, much resembles the farina of the croton nut; alike in the small bulk of the dose, and the promptitude with which it exerts its power; and also in the disadvantage attending the use of both, for each occasionally induces inflammatory action.

CASE I.

Passive State of the Uterus.

On the 12th of April, 1830, I had the first opportunity of trying the ergot of rye, unassisted by other drugs, in a case of protracted labour. The patient, a cow, five years old, with her third calf, and in high condition, had exhibited for three days unequivocal symptoms of incipient labour, but had made no progress. On the fourth day she refused food, but drank water very eagerly. On examination per vaginam, I found the os internum so little dilated that it was with difficulty I could introduce two fingers: the calf was very lively, but there was no action of the uterus. She had been three times milked since the 8th, but the udder now was cold and empty, and, to use her owner's phrase, "she was making up."

I gave a decoction of half an ounce of the ergot of rye. An hour afterwards, when we were administering a second dose, she had a very smart pain, and which was quickly repeated: the waters came; and, in a quarter of an hour more, a very fine heifer calf was born, and two gallons of milk taken from the udder.

At my evening visit, I was informed that the pains gradually subsided; but as the placenta was retained, I gently intro-

duced my hand, and found the uterus perfectly at rest, not even contracting when the umbilical cord was strongly pulled. The dose of ergot of rye was, therefore, repeated, and the placenta expelled two hours afterwards. The cow did well, and has had three calves, but at two of her labours it was necessary to treat her in the way that has been described.

CASE II.

Long-protracted Parturition.

August 12*th*, 1830, 10 A.M.—I was requested to visit an aged cow that had calved and cleansed eight days previously, but had not ceased straining from that time.

Various medicines and numberless schemes had been tried by several cunning men called cow-doctors, in order to relieve the poor animal, but all had failed.

I found the cow in a very excited state, pulse 70, grinding her teeth every instant, and foaming at the mouth from agony. On examination I was persuaded there was another calf in the uterus; but from the quiescent state of that organ, and the spasmodic action of the vagina, I was unable to remove it. I gave a decoction of two drachms of ergot of rye in a pint of water, repeated every hour.

4 P.M.—The decoction had been administered four times, the character of the pains had changed, the uterus was much excited, and with very little difficulty I removed a dead calf, with the placenta adhering.

9 P.M.—The action of the uterus had rather decreased, but the muscles of the abdomen were in full play. The vaginal discharge was profuse, and very fœtid; the respiration hurried, and the pulse 80. Nine pounds of blood were taken from the jugular; the flanks fomented with hot water for two hours, and then rubbed dry, and the cow was removed to another stand and covered with a woollen cloth. A drachm and a half of nitre, and half a drachm each of digitalis and emetic tartar, were ordered to be given every six hours.

13*th*, 6 A.M.—She had experienced great relief from the treatment; the pulse was 50, the respiration natural, the extremities warm, and the pains less violent. Continue the medicine.

14*th*, 8 A.M.—Eager for food; pulse 65; the pains continue; and the uterine discharge profuse and very fœtid. The body was ordered to be fomented with hot water for six hours, and the medicine repeated every four hours.

10 P.M.—Pulse intermitted every fifth stroke; the pains had ceased; and the discharge was more healthy. The medicine was discontinued.

15*th*.—Much improved, and the vaginal discharge of a healthy character.

16*th*.—Better; and milks well, considering her sufferings.

20*th*.—Quite well; gives four gallons of milk night and morning.

Remarks.—I could add a great number of similar cases to the two reported, but I am unwilling to occupy your pages by a mere repetition of medicinal effect on a particular organ. Ergot of rye has never yet failed (in my practice) to stimulate the uterus of cattle, whether the muscular power of that organ was exhausted by previous efforts, or torpid from peculiar temperament. Cases have occurred when I have thought it advisable to bleed freely just when the medicine was communicating its energy to the uterus; particularly when the vagina was much swollen, or the bladder full of water, or when there appeared much rigidity of the muscles, &c. The reason of such treatment will be plain to an intelligent practitioner, and no other ought to administer the ergot of rye. In apportioning the dose, the state of the cow must be taken into consideration. If for expelling the placenta, the beast feeding well, &c., I now give, in thick gruel, ergot of rye powdered ℥ij, carbonate of ammonia ʒj, and juniper berries ʒss; this is repeated in twelve hours, and again on the second day if requisite. If there is straining, I omit the ammonia, and give a drachm each of the ergot of rye, digitalis, and emetic tartar, with half an ounce of powdered juniper berries, repeated every twelve hours for two days, if necessary. But if there is inflammation of the uterus, I give no ergot of rye to expel the placenta, but bleed freely, use fomentations, and injections of warm water, give tartarized antimony, nitre, and digitalis, and the cleansing leaves the uterus, without so much risk of destroying the animal.

CASES OF DROPPING AFTER CALVING.

By Mr. G. Bainbridge, *Saffron Walden.*

The months of February and March 1833 afforded me several cases of fever, or, what is commonly called, dropping after calving. The most frequent state in which I found my patient was down, and unable to rise; the pulse full and frequent; the ears hot; the nose dry; the head doubled back; the animal moaning and expressing great pain; insensible, or at least not taking any notice of her calf; the respiration seldom much and oftener not at all affected. I immediately bleed to the amount of two gallons, or in some cases more; and give a draught composed of

Epsom salts ℔j, spirits nitre ʒss, and linseed oil ℔j, in plenty of thin gruel; or, if not able to get gruel, hot water, and given to the animal as hot as she can possibly bear it; I also order from four to six ounces of salts to be given in gruel every six hours afterwards: plenty of ginger is always boiled with the gruel. If my patient is not relieved in twenty-four hours, and the state of the pulse permits it, I bleed again, and repeat the salts, oil, &c. Out of six cases in the last two months, five perfectly recovered. In one case, a very fat old cow that had twice before been my patient with the same disease, I took away three gallons of blood, and gave the salts, oil, &c., to which I added two drachms of calomel. On my second visit there was an abundant evacuation of black fœtid dung; she was still unable to rise, but there was evidently great improvement, for she did not moan or look so dull, her head was up, and she noticed her calf.

The bag was much inflamed and enormously swelled, not with good milk, but with matter and coagulated milk, commonly called dregs. A cordial draught was given; the bag was fomented with hot water, and then well rubbed with soap liniment three or four times a-day: plenty of thick gruel was given frequently, in which was dissolved, night and morning, half an ouce each of nitre and sal ammoniac, and some cordial powder. She got up in the course of the day, and ate a little bran, mixed with hay chaff, which was all that was allowed her for some days. She mended very fast; the bag soon got well, and she fattened a fine calf.

Will you, or some of your able correspondents, explain the seat of this disease? It has been supposed to be caused by inflammation of the womb; but, in several cases that I have examined after death, I have found the womb and all other internal organs perfectly healthy.

Is it not caused by the animal being in too plethoric a state at the time of calving, as but few cases of it occur where the animal is in low condition, although I have met with it when the animal was very poor, but, then, she had been highly fed for the last few weeks? Is the brain the seat of disease, or the digestive organs?

I remember, on examining a cow that died after lying six days without our being able to get any medicine to operate, although gallons of gruel were given daily, that the manyplus, or third stomach, was as hard and as dry as if it had lain many days in the summer's sun. The gall-bladder was distended with thick, almost black bile, but all the other organs appeared healthy.

CASES OF INDIGESTION.

By the same.

In the months of May and June I had a great number of cases of what I believe to be indigestion. The following were the general symptoms:—the cows failed in quantity of milk for a meal or two; the coat stared; some expressed pain, as if griped; the pulse was but little affected; the ears were badly swelled; and the extremities rather cool. A purgative of salts and oil was given, to which from two to four ounces of spirits of turpentine were added; some cordial powder was given, night and morning, in gruel; and they very soon recovered.

A CASE OF POLYPUS IN THE STOMACH OF A HORSE.

By Mr. Brown, *V.S., Melton Mowbray.*

I have a preparation of a polypus which was taken out of a horse's stomach, and given to me by a groom, who, I may add, is a respectable and observing man. Should you think his statement worthy of your notice, you will give it a place in your Journal.

About half past four o'clock in the morning of the 1st of May, 1832, the groom found the old brown horse Sheffield apparently labouring under an attack of the bowels, which he describes as follows: "The horse was continually lying down and getting up, and, to all appearance, he had been doing so for some hours; his pulse was from 70 to 80; patches of cold sweat were on different parts of the body. There was no veterinarian in attendance, but the horse was largely bled; oily purgatives were given every three or four hours, with frequent laxative clysters, which did not afford any relief, but the pain became more violent, and he died about seven in the morning of the 6th. On opening the body, the bowels were free from disease, except the first small gut, which was mortified about fifteen inches; the stomach was full, but its contents were liquid, and at the lower extremity there was a pendulous substance, which was plugged into the gut, totally obstructing the passage." I am informed that the animal was a remarkably healthy one, and apparently suffered no inconvenience from the polypus until it formed a mechanical obstruction to the pylorus. The pedicle is rather tortuous, with

an artery and two veins in the centre, having an expanded origin, which becomes converged into a firm cord, one inch in diameter and three long, terminating obliquely in the body of the polypus, which is a firm flat substance, weighing seven ounces and a quarter.

A CASE OF RUPTURE OF THE LIVER.

By the same.

Between seven and eight o'clock in the evening of the 21st of February, 1833, a messenger came in breathless haste, and desired me to run to the stable of a celebrated sporting gentleman to attend the *Old Queen*, for he thought that she would be dead before I could see her. I made the utmost haste possible to see my patient, although I was fully convinced that my attendance would probably be transient; because my feelings have been too frequently wounded for me to suppose that any confidence would be reposed in my judgment, by sporting gentlemen taking cases from under my treatment (which were recovering as fast as possible), and placing them under the care of empirics, whose want of courtesy, or a presumed self-sufficiency either in secret or intuitive knowledge, renders any consultation impracticable. But, however limited my pathological knowledge may be, sympathy excites me to exert my humble efforts, in order to save or alleviate the sufferings of those valuable animals that are occasionally intrusted to my care. On my arrival I found that the subject of attack was a brown mare, thirteen years old, a superior hunter, and well known in Leicestershire. She was standing tremulous, with her countenance and respiration indicating the greatest distress. The pulsations of the submaxillary artery were not perceptible, while those of the heart were falteringly heard: the buccal, pituitary and conjunctival membranes were deathlike; and before I had been in attendance many minutes, she fell down and expired.

From these indications I conceived that death had probably been caused by some internal hæmorrhage. The groom observed her trembling between six and seven o'clock, P.M., and abstracted a small quantity of blood, which increased her sufferings. On the 19th she went through a good run with the Earl of Lonsdale's hounds; and although she got a bad start, and was slightly hung in a fence, she performed her day's work in a superior manner. I was informed that the mare had an attack of the jaundice in October, but had not shewn any symptom of

indisposition since that period. This statement led me to suppose that the liver might be disorganized, and that a rupture of that organ was the probable cause of death. On opening the abdomen, I found the contents covered with extravasated blood, which had issued from a deep rupture in the large lobe of the liver, extending nearly across it. The structure of this viscus was disorganized, of a reddish clay colour, with the thin parts dry and brittle. There was a coagulum adhering to the peritoneum, which was formed into a sac. As the liver had lost its tenacity, it probably became slightly ruptured when the mare hung in the fence; and so long as the peritoneal covering was able to restrain the extravasated blood, the animal suffered no apparent constitutional derangement: but when that membrane burst, the texture of the liver easily separated; profuse hæmorrhage was a necessary consequence, and death the inevitable result.

ON GRASS-ILL, JUMPING-ILL, &c. IN SHEEP AND OTHER ANIMALS.

By Mr. Corbet, *V.S., Simonburn, near Hexham.*

During the spring of 1830, a disease seized a great many of the sheep in the out lands in my neighbourhod denomi ated *Grass-ill, Jumping-ill, Leaping-ill, &c.*: above one-third of many of the farmers' sheep died of it. The disease paid little respect to any kind, and lambs and ewes died equally as fast as the fatting sheep: cows and cattle of all ages are subject to it; and hens, ducks, geese, swine, &c. I have every reason to believe that a yearling colt, at present under my care, is labouring nnder the same complaint; but it is rarely met with in horses. The land most commonly producing the disease is such as can be remembered to have been covered with wood, perhaps, half a century ago; but our inland does not often produce such complaints.

Many cattle, on being first affected, may be said to become completely mad, on account of their furious manner; and some die in a very few hours, particularly sheep.

The most conspicuous feature of the complaint in the colt is very obstinate costiveness, loss of the use of his limbs, and his being much inclined to fall backwards; but the appetite remains tolerably good. There was no great distortion of the eye, nor any peculiar throbbing of the temporal artery; the pulse was 70; the mouth hot; the extremities rather cool. The disease was probably the consequence of indigestion. I was informed that dogs

had died of a similar malady; and was also told that several people have been similarly affected by eating sheep that had died from the effects of leaping-ill; but they probably suffered from indigestion alone, as many of the shepherds have not eaten so plentifully of mutton for many years, and some of them, undoubtedly, have filled themselves too full.

A CASE OF ENORMOUS POLYPUS IN THE UTERUS OF A COW.

By the same.

A VERY singular and enormous enlargement was taken out of a cow, weighing upwards of six stones. This cow was a large roomy animal, and had two or three times appeared as if affected with a species of gripes, but discharging copiously from the vagina. She had been sadly gored by some other cattle, and had likewise had some heavy falls; in fact, she had met with hard treatment while she was in calf. She seemed to have gone her full time; but required more assistance to effect parturition than I was able to give her, although it was but a small calf. She died while I was preparing to cut the fœtus away. I think, from previous symptoms, that the tumour, a polypus, had existed in the womb for a considerable time. The greatest part of it was composed of or resembled firmly coagulated blood; its smaller part, and that part that lay in the vicinity of the bladder, was seemingly more organized with the appearance of bloodvessels running through it in every direction, and of a more blue colour than the broad end. It was very easily torn.

A CASE OF STRANGLES SUCCEEDING TO SUPERPURGATION.

By Mr. J. COOPER, *V.S., Coleshill.*

ON Wednesday the 13th of November I was requested by Mr. Ward, of Maxstoke, near this town, to send some medicine for a three-year-old draught horse. The animal, the owner said, had been the whole of the summer in very low condition, not appearing to thrive as the rest of the team had done, and which was attributed to worms (from his description, ascarides), many of them having been evacuated with the fæces.

I sent a scruple of calomel to be given at night, and four drachms of Barbadoes aloes for a morning ball, and directed that

the horse should be turned into a loose box. On Friday evening a messenger came to say that the horse was very unwell, having commenced purging the preceding morning, and which still continued very violent. I sent two ounces of prepared chalk, and half a drachm of powdered opium, to be given in a quart of warm gruel.

In the morning I visited the horse, and found him severely affected by the purgative. The fæces were passed involuntarily. The astringent medicine was repeated, and I ordered gruel to be given every three or four hours.

17*th*.—The purging continues the same. The horse refuses all food, but takes the gruel freely by means of a bottle. The respiration somewhat disturbed.

18*th*.—The purging yet violent. The animal has eaten a little hay during the night; there is great desire to drink, and tepid water has been given: I ordered gruel to be substituted. He lay down several times, but immediately rose again. Respiration was more laborious; the pulse 50, and very weak. I gave an ounce and a half of prepared chalk, two scruples of ginger, and half a drachm of alum in gruel.

19*th*.—The diarrhœa abated. The horse eats a little hay, and drinks a great quantity of gruel: the breathing was more difficult; the pulse 70. I abstracted four pounds of blood, and ordered hot fomentations to the abdomen.

21*st*.—Very much improved, so far as the superpurgation goes; appears more lively, eats well, and drinks his gruel; the fæces are of a very good consistence. Pulse 42; but he has a slight cough, with a watery discharge from the eyes and nose, and the throat is evidently sore.

23*d*.—I was again sent for, and found the horse much worse. The pulse upwards of 60; he refuses his food and gruel; the cough has subsided, but the discharge from the eyes and nose has become more purulent; the submaxillary glands very much swollen and tender; the horse breaks out into cold sweats several times in the day. The extremities and ears quite warm. He has not attempted to lie down since the 18th. I have no doubt that the colt is now labouring under the strangles. I blistered the enlarged glands twice during the day. The discharge from the nose increased very much. I ordered the head to be steamed with hot water, and left him. A messenger came in the morning to inform me that the horse had fallen down, and died instantly.

On Monday morning I went for the purpose of making an examination, hoping that, on dissection, something would shew itself to account for the progress of the disease. On laying open

the sternum, and bringing the pericardium into view, I found it to contain about two quarts of fluid. It presented patches of inflammation, and was considerably thickened. The left side of the heart was very much enlarged; the right might be said to be in a state of dilatation, and so flaccid, that it would seem as if every contraction would have ruptured it. The pleuræ pulmonalis and costalis that lay in contact with the pericardium were slightly inflamed; the lungs and abdominal viscera were perfectly healthy. The abscess under the jaw had broken internally, and shewed every sign of speedy resolution.

I have no doubt that the excitement produced in the system by the cathartic medicine disposed the colt to strangles, and, that disease interfering with respiration, the heart had to perform an extra function; and being already in a diseased state, the death of the animal ensued. This also was the cause of the horse being in an emaciated condition so long. Whether hypertrophy of the heart is produced by over-exertion I cannot pretend to say, but this horse was always a very free worker.

Such cases as the above, Messrs. Editors, shew the necessity of the veterinary surgeon's making post-mortem examinations himself. In too many instances the practitioner never attends; and the owner, not being able to trace the connexion between the cause of the disease and the effect produced, and sometimes not knowing healthy organs from diseased, draws a wrong conclusion; and thus the professional reputation of a man is seriously injured.

A CASE OF SINGULAR AFFECTION OF THE BRAIN AND PARALYSIS.

By Mr. C. DICKENS, *V.S., Kimbolton.*

March 19th, 1833, I was requested to see a heifer that was lying in a field a mile from hence, the owner stating that she had something the matter with her head. When I arrived she appeared quite insensible; she would get up and run a few yards with her head thrust forward, as if unconscious where she was going, and all at once fall as if shot. This she repeated several times in the short space of ten minutes, when she lay prostrate from total exhaustion, and I had an opportunity of noticing the following symptoms: the pulse 40, and oppressed; nose dry; mouth frothy; conjunctival vessels highly injected; pupils dilated; the surface of the body and extremities warm; the horns hot; and very great heat at the back of the occiput; the fæces of good consistency; the respiration slightly hurried.

Treatment.—I bled from the jugular in a full stream until eight pounds of blood were taken, and gave mag. sulph. in solution ℔j, nit. potass. ʒij.

In the evening she made frequent efforts to rise, but was so much exhausted that they were ineffectual. I ordered ol. croton twenty drops, oil of turpentine half an ounce, and sweet spirits of nitre an ounce, to be given in gruel. I cut the hair close, and applied a strong blister at the back of the head.

20*th.*—Has not moved from the place where I saw her last night. Pulse 55. The bowels not acting, I removed some hardened fæces from the rectum, and administered an enema. Extremities quite warm, and she ate very little. I administered one pound of Epsom salts, two drachms of ginger, and oil of caraways thirty drops in a pint of warm water, with four ounces of treacle.

21*st.*—She looks more lively, and has eaten a little hay in the night; but the bowels were not moved; the mouth was hot, and the pulse had risen to 70, and was wiry. The drink of yesterday was repeated. The blisters were acting well.

22*d.*—Not yet able to rise, but lies with the head thrust out as far as possible; slight appetite; the bowels acting well. I ordered half an ounce each of ginger, gentian, and oil of turpentine in gruel.

23*d.*—She appears much better, but not able to rise; in fact she does not attempt it even when struck with a stick: eats better. Pulse 45. Give powdered caraways one ounce, and powdered mustard-seed two ounces in gruel.

24*th.*—On my striking her with my stick, she made several tneffectual attempts to rise, and, at last, succeeded and walked io the homestead, a distance of five hundred yards from the place where she fell. I repeated the tonic medicine for a few days, and introduced setons in the poll, from which time she gradually gained strength; but for a considerable period carried the head in that poking position in which I first found her.

I am induced to forward this case because I think it forms one among many of the affections which that important organ, the brain, is liable to, and of which we as yet know but little. I give it no name; neither do I profess to decide whether that organ was primarily or sympathetically affected. I leave you, Messieurs Editors, and your readers, to form their own opinions on that point. Mine is in favour of the latter case; else why should we have so much constipation? In fact, does it not bear strong analogy to the affection we term stomach staggers in the horse?

CASE OF SUCCESSFUL TREATMENT OF DIVISION OF THE PERFORANS TENDON.

By Mr. F. Fuller, *V.S., March, Cambridgeshire.*

On the 3d of March, 1831, I was sent for to attend upon a mare, the property of Mr. Tombling, of Maney, that was supposed to have dislocated her near shoulder. On my arrival I found the patient lying on her off-side; the village cowleech, with two knights of the anvil, assisted by half a dozen muscular fellows, using all their professional skill and power to reduce the *supposed* dislocated limb. I inquired of the proprietor into the history of the accident, who informed me that he was taking her to Downham-fair with the intention of selling her. When he had got about four miles on the road, some persons passing by frightened her, and, she, being blind of the off eye, blundered into a drain by the road side; and it was with great difficulty that she was got out: when got out she was so lame that she could scarcely put her foot to the ground. Upon my examining the lame leg, I discovered a transverse wound in the felock, about an inch in length, and midway between the two pastern joints, at which place the tendon of the flexor perforans was completely divided, as if done by some sharp instrument: but it was with some little difficulty that I could persuade these powerful wiseacres that so trifling a *scratch*, as they termed it, could produce so much lameness. Some fluid of a synovial character escaped from the wound, apparently from the sheath of the perforated tendon. There was not the slightest hæmorrhage from the wound.

I immediately placed her in slings between waggon shafts, and applied a piece of adhesive plaister to the wound when the leg was in a flexed position, and in which position it was kept by means of bandages. As she appeared to be labouring under great excitement, I abstracted eight pounds of blood, and gave her some anodyne and fever medicine; and I ordered bran mashes and a little hay. On the following day I found her precisely in the same position as I left her: there was no swelling about the leg; the bowels were rather confined; she had a little fever, but did not appear in so much pain as yesterday. I ordered her ʒiii of aloes in a ball, and a little fever medicine in mashes twice a-day.

I saw her again on the fourth day, when she appeared to be going on well: from this time I visited her two or three times a week.

About two months after the accident she was removed from the slings; the bandages were taken from the leg, and a high-heel shoe applied, which was gradually reduced to the common shoe. Four months afterwards she went to regular posting work, and has gone perfectly sound up to the present time.

ON THE TREATMENT OF PHYMOSIS IN FOALS.

By the same.

HAVING frequently been called to cases of phymosis in foals, and not having seen the disease named by any veterinary author, I have sent you a brief account of it, which may not be uninteresting.

In this country more than two-thirds of the colts, at the time they are foaled, have an adhesion of the prepuce to the penis, which is sometimes so contracted over the glans that it not only prevents the foal from showing his penis, but completely intercepts the passage of the urine. In consequence of this, distention of the bladder takes place; inflammation follows, and, if not relieved, the foal dies about the third or fourth day.

In some cases I have seen the urine extravasated between the abdominal muscles and integument, and making its escape at the umbilicus; but death has then almost always ensued. In several cases that I have examined after death, I found the bladder ruptured. The disease being so prevalent here, most of the farmers in this part, as soon as the foal is dropped, attend particularly to this circumstance, and when they find that the disease exists, send immediately for medical assistance to "*dingle the foal,*" as they term it here, or to set the penis at liberty; and which is done in the following way:—The foal is placed upon its left side, and confined so by an assistant; the prepuce is then carefully separated from the penis with the finger and thumb; a little oil is poured upon the parts, and after this the foal generally does well.

ON GLANDERS,

THE STATE OF THE CONSTITUTION PREVIOUS TO THE APPEARANCE OF THE DISEASE, AND ITS CONTAGIOUS CHARACTER.

By Mr. HALES, *V.S., Oswestry.*

IN the last number of THE VETERINARIAN, one of the Editors gives us an account of a sort of running fight between himself and Mr. Vincs, as to the nature of glanders. The collision of

opinion between eminent men frequently leads to the best results, occasioning their closer investigation of the subject in dispute ; but I am sorry that two gentlemen, to whom we are so much indebted for their professional labours, should be induced to make use of expressions of personal acrimony towards each other, and hope it will be discontinued in any future discussion they may have either upon this or any other professional matter.

The subject of glanders having been brought before your readers, I shall trouble you with a few observations upon that formidable disease ; not with any arrogant feeling of being able to settle the question between Mr. Youatt and Mr. Vines, but, in the spirit of inquiry, briefly to recount what I consider to be the result of my own practical attention to this disease, and in the hope that others, far more competent, may come forward to discuss this important question.

Mr. Vines, in his work upon this subject, entirely sets at nought the doctrine of glanders as taught by Mr. Coleman : he treats as nothing the experiment which was supposed to prove that the disease was communicable through the blood, this fluid being in a contaminated state, and ridicules it as going back to the exploded doctrines of the humoral pathology. That a diseased state of the blood is the primary cause of some of the most important diseases of the human subject, has of late been ably advocated by several very scientific men, particularly by Dr. Stevens, in his work on the blood, &c. Mr. Vines brings forward as an argument against the blood being affected with disease in cases of glanders, that he has produced the same results by injecting a solution of sulphate of copper or other irritating fluid into the veins. Now, to my mind, this is an experiment in proof rather than in refutation of Mr. Coleman's doctrine, for it proves that the blood is in a disordered state in glanders, and capable of producing the same effect upon an healthy animal as would result from the injection of an irritating fluid into its veins. Whether Mr. Coleman's division of glanders into acute or chronic is the best that could possibly have been adopted, I shall not stop to inquire ; but I am fully satisfied of this, that some horses have glanders for months without any falling off in their general health, and yet communicate the disease to others, which will die, before the propagator of the mischief has begun to decline in constitutional health.

Notwithstanding all that has been written and said on the subject of glanders, I am afraid we still have but an imperfect knowledge of its true nature, and the doctrine of specific virus appears to me equally as intelligible as that of " unhealthy inflammation." According to Mr. Vines' theory of " healthy and un-

healthy inflammation," if a horse is attacked with violent inflammation of the lungs which destroys him in forty-eight hours, it is to be set down as a case of healthy, active inflammation; but if the attack is less violent, and, after proper depletory measures have been adopted, the inflammation subsides, but leaves the horse in a state of debility, although he may recover, this is to be considered as a specimen of unhealthy inflammation; for if I at all understand Mr. Vines' description of unhealthy disease, it means neither more nor less than that state of debility to which every horse is reduced at the conclusion of every severe disease that continues beyond a few days. Now, when it is known that glanders does not supervene upon one horse in a hundred that is reduced to this state of debility, it appears reasonable to look for some other cause of the disease than the debility or "unhealthy" state of the animal; and in those instances in which glanders follows an attack of some other disorder, it appears to me quite as fair an inference to suppose that the weakened state of the horse predisposed him to the action of the peculiar or "specific" matter of glanders. In addition to this, as it can be satisfactorily proved, as far as human observation goes, that horses in the best possible condition, and previously in the most perfect health, occasionally become affected with glanders (as from contagion), I conceive it must be admitted that these cases, at all events, do not owe their origin to the subjects of them being in an unhealthy state before they became affected with glanders; for the *ex post facto* argument, that because a horse becomes glandered he must have been previously in an unhealthy state, will scarcely be received.

Mr. Vines, if he does not entirely deny the contagious nature of glanders, considers that it very seldom arises from such a source; and this is probably the natural consequence of his notion of the malady, that it is originated by unhealthy disease; but I hope (without presuming too far) that I may advise my professional brethren to be wary in receiving such doctrine, no matter how high the authority from which it may emanate; and, whatever their private opinions may be, to consider *in their practice* that glanders is a contagious disease. No harm can result from precaution, while great evil may arise from our being lulled into too great security. My faith in contagion is not so strong as to believe some of the extraordinary accounts that are given of glanders being caught in this way; but my own experience fully convinces me that the disease may be readily communicated by a glandered horse being stabled with others, or kept at grass in the same pasture with them. I cannot, perhaps, better elucidate this part of my subject than by giving a brief account of some cases

of glanders which occurred in my practice not long since, and in which the contagious nature of the complaint appeared to me very evident.

In February 1832, I was sent for, to a considerable distance from this place, in order to give my opinion on the case of a horse supposed to be glandered: I felt no hesitation about the matter; and, as the horse had been diseased for several months, he was shortly afterwards destroyed.

In the latter end of June in the same year, I received a letter from the gentleman, the owner of the above-named horse, again requesting my attendance at his house. I found that my patients were two very fine four-years old horses that had farcy ulcerations and swellings upon the extremities: the disease had been observed for two or three weeks, and the horses prescribed for by a veterinarian of the neighbourhood. Knowing the previous case of glanders, I very strictly inquired whether there had been any communication between these young horses and the one that had been destroyed, and was positively assured by the proprietor of the horses and his groom that there had been no possibility of intercourse between them; and that they had, in fact, never been near the glandered horse, and that any thing like contact or application of matter was out of the question. After this declaration, I was obliged to admit and to consider that the farcy must have had its origin from some other source than contagion, and advised that Mr. Vines' plan of treatment should be adopted.

The gentleman now asked me to walk with him to a field at some little distance from his house, in order to see a very fine hunter that he supposed had taken a cold some time ago, and which had left an enlargement under his jaw, which he should like to have removed; at the same time remarking, that there was not much the matter with him, for he was in as good health and spirits as a horse could be. I found the horse full of flesh and spirits, but with an enlargement of the size of a pigeon's egg firmly attached to the lower jaw, and a discharge, but not a profuse one, from the nostril of the same side. The horse had been in the same state for three months.

The case was now unravelled; for although this horse had not been kept in the same stable with the subject of the first case, still there were frequent opportunities of communication; they were watered often from the same bucket, and the same brushes, &c. made use of in dressing them: in fact, the first case was not supposed to be glandered till shortly before I saw him, and no very strict quarantine had been enforced.

In May, the hunter (with the enlarged gland and nasal dis-

charge then upon him) had been turned into the same pasture with the young horses, and they were kept together until the young horses were removed in consequence of their having become diseased.

Treatment was of no avail, and in six weeks the young horses were decidedly glandered. A professional friend who saw them agreed with me in opinion that it was putting their owner to useless expense to continue the treatment any longer, and they were destroyed.

At this time the constitutional symptoms shewed themselves in the hunter; ulceration and bleeding from the nose came on, farcy supervened, and this very valuable horse, for which 150 guineas had been refused, was consigned to destruction. The value of the three horses mentioned was at least £400, and I think there can be no doubt that in them glanders was propagated by contagion. Of the treatment of glanders I have nothing to offer, and am sorry to observe that I am afraid, as yet, we have no remedy for it. Those who have laboured to elucidate this important subject deserve our best thanks, and I sincerely wish that their endeavours may be crowned with success.

ON THE IMPERFECTION OF THE PRESENT VETERINARY NOSOLOGY.

By Mr. HARRISON, *V.S., Lancaster.*

NOSOLOGY being deemed in itself so essentially requisite for the qualification of the physician and surgeon, cannot, for similar reasons, be accounted unimportant to the more humble yet highly useful practitioner of veterinary medicine; but why this useful if not equally important part of our profession is so much and so shamefully neglected, and allowed to remain in the dark and obscure state it is, is not for me to decide. I should be loath to attribute its present forlorn condition to a want of ability on the part of veterinary professors and practitioners, but rather to a false delicacy which restrains them from the introduction of new names, and, what also must unavoidably follow, new diseases into veterinary science; yet all practitioners must concur in opinion as to its necessity, and more particularly when they reflect that the science we profess, although daily progressing in the path of improvement, is but as yet in an imbecile state. To all veterinary surgeons who pride themselves in being *not nominally* but really such, these few fleeting remarks may be useful, and will, in all probability, forcibly press upon their minds the existing necessity for a true and plain classification of diseases, and which, when

obtained, will throw a new, yet clear and distinct, light upon our pathological inquiries, by enabling us with greater precision to note the various stages of disease, and to apply our remedies accordingly. This is the only benefit accruing from it, for the future publications of the scientific veterinarian will then carry upon the very face of them the stamp of honest merit, and be a distinguishing mark from those of the ignorant pretender, which are the bane and disgrace of the stable, the animal's too frequently irreparable injury, and consequent loss to the owner, and, what is still worse, a great bar to the advancement of true science. By its means (when we shall no longer hear of a horse's "grease being melted," with a thousand other absurdities which I blush to name, but still more to recognize) I should also, in a short time, hope to find science asserting its own proper place and sway, and the unmeaning vocabulary of stable-men driven from their present impregnable fortresses, and deprived of their long accustomed residence, which would be a reform highly praiseworthy to the individual who attempts it, and a consummation truly desirable. I feel conscious, Messrs. Editors, that to accomplish this task will be a work of no small difficulty, setting aside all old prejudices; for as new diseases, hitherto unnoticed, or merely regarded under the common heads of the very convenient terms colds, or fever, must of necessity follow, so, of course, will our pathological studies be directed and stimulated to greater exertions, and veterinary science ultimately benefitted; in proof of which, how many cases have we all seen where the disorder has not at the onset, and oft times never during the whole of its progress, exhibited itself (according to our present imperfect if not improper classification of diseases) in any specific form under these circumstances! Although not a new disease, yet still deprived of a name, it passes unregardedly if not thoughtlessly by, under the familiar appellation of cold, or fever, to the disgrace of the veterinary surgeon and the science he professes. It would be an easy matter for me to enumerate numberless facts in corroboration of what I have advanced; but fearing to trespass upon your kindness and the pages of THE VETERINARIAN, which, in the opinion of many of your readers, might be devoted to matter more interesting if not of greater moment, I shall therefore content myself by asking, Do we not repeatedly, in practice, meet with cases where the parotid glands are alone the seat of inflammation, corresponding almost in every tittle to the cynanche parotidæa in the human subject? and this being the case, as it undoubtedly and undeniably is, would it not sound better from the mouth of the veterinary surgeon, than the absurd one of the vives, or bastard strangles? This alone, *cum multus aliis*,

which I could mention, have long pointed out to me the necessity that exists for a nosological arrangement of diseases, and until we obtain this, we must be content to jog on in the old road of ambiguity, darkness, and, I will venture to say, ignorance.

That a system of nosology, upon the plan of the late Cullen's, would be useful, I do not hesitate to say; still do I feel that the author who attempts any thing like it would be censured by some; but the generality of veterinarians would be essentially benefitted thereby, and ought to feel that the man who succeeds in it deserves at least our gratitude, and I think should receive the thanks of the profession generally. Upon looking over what I have written, I much fear your patience will be exhausted, and you probably may think it too diffuse for the subject; in that case, remove any excrescences you think desirable, for the instrument is in your own possession. Having entered upon another year, I must, in conclusion, wish the Editors of THE VETERINARIAN every success and assistance they deserve.

A SINGULAR CASE OF STRANGULATION OF THE ILEUM.

By Mr. W. HENDERSON, *V.S. to the King, for Scotland.*

IT frequently requires all our tact, talent, experience, and observation, to treat, discriminate, classify, and prognosticate, regarding the various diseases which the horse is liable to; and more particularly so, as we find the same disease puts on such a difference in the variety of symptoms which we have to combat: the more information, therefore, we can gather on such subjects the better. I have, consequently, selected the following case, as I conceive that it will be not a little interesting to some of your readers. It is the first case of the kind I ever met with, and I believe it to be of very rare occurrence.

About two o'clock in the afternoon of June the 2d, 1829, I was called to see a chesnut gelding belonging to an officer on the Staff Department here. The servant who had charge of him informed me, that no sooner was the horse put into the stable and his harness taken off, than he threw himself down with violence, stretching out his limbs at one time, and drawing them in at another, rolling from side to side, looking round at his loins, and, at the end of such struggles, breaking out in patches of perspiration, in various parts of the body, particularly about the

shoulders and loins. The pulse was undisturbed; the circulation was free through his extremities; the salivary secretions were diminished; the conjunctive and Schneiderian membranes healthy.

Treatment.—I administered an enema, but it was followed by no relief. Nine pounds of blood were then abstracted; still no relief. One pound of ol. lin. and four drachms aloes barb. were administered, and friction applied to the abdomen, which, with hot fomentations with flannel cloths, and enemas again repeated, relieved him.

I called on the next morning, and found him purging briskly, and quite relieved. We meet such cases, to all appearance, so very often, that I thought no more of it, conceiving it to be a simple case of colic or indigestion; but the owner of the horse called on me next day, and, after asking my opinion, he told me he did not know what to think of his late purchase, as he had been three or four times seized in a similar manner, although not so severely as the last time, and talked of returning him to the person from whom he had bought him, thinking it to be some bad habit or trick he had acquired. The former attacks had only lasted about ten or fifteen minutes, at the expiration of which he got up, shook himself, and commenced eating as greedily as ever. I told him it might very possibly arise from worms, and advised him to let the horse have two doses of oil and aloes, which were administered to him at different periods, but without effect. I then tried the starving system, such as a very limited allowance of corn, little hay, and bran mashes, which not only seemed to diminish the frequency of the attacks, but mitigated the violence of the symptoms; and I thought, by a continuation of such treatment, that he would entirely recover. I was, however, disappointed. The owner had to meet an appointment in the country, and, being late, had to drive his horse beyond the ordinary rate; and, on returning home, the animal was seized with another and fatal attack. I employed every means to relieve him, but all were in vain, and the following are the post-mortem appearances:—The small intestines very much inflamed; and a double stricture, the contracted spots about eight inches from each other, near the termination of the ileum: the portion of intestine posterior to the stricture was a good deal dilated, and thickened and inflamed, particularly at the very neck of the stricture, which was also stopped up with food: the large intestines were slightly affected; the left kidney diseased, and about an ounce of pus in its pelvis. The lungs in a state of congestion.

Remarks.—There is no doubt that the various attacks he had during the time I attended him were brought on by the ex-

istence of the stricture, as also his death; for I found, that, after the peristaltic motion was increased to a given ratio, or in any way particularly hurried from exertion, it very frequently brought on the complaint, which I conceive must have arisen by the food in the intestinal canal meeting with resistance at the strictured parts; and it is my opinion that the stricture must have been brought on from an old attack of introsusception, and from which he must have had a very narrow escape for his life: the two strangulated portions of the gut having for some time been squeezed together, inflammation was set up, lymph deposited, and the stricture formed.

I may further remark, that this case furnishes another instance of unsoundness in horses, of which no notice has yet been taken; and there is no question that the purchaser would have recovered the price of the animal if he had received the information a little sooner, which he obtained when too late, that the horse had had several similar attacks previously to the date of purchase.

A CASE OF FOUL IN THE FOOT,

As related by the Owner, Mr. JACKSON, *in a Letter to Mr. Dick.*

LAST year, about this time, a cow of mine became very much afflicted by a soreness in one of her hind feet. It was so very painful, that she soon lost much of her flesh, and dried of her milk; but as she was a valuable cow, I did not like to destroy her without giving her a fair chance: and, during last winter and spring, I called to her assistance several persons in the neighbourhood, who were supposed to be well skilled in the diseases of black cattle; one of whom said it was a corn, another that it was a core, and a third that it was some sort of growth in the foot very deeply rooted, and so on.

Several things were done for her last winter. The wound was washed and dressed regularly every day, and the sore place (which appeared to me then to be about the size of half-a-crown) was burnt down with vitriol, and the top of it was cut when it grew high, and it was, until Whitsunday, kept bandaged, but all to no purpose: I then gave her up for lost, and she was turned out to pasture to live or die as she might. She has continued in great pain all the summer; and as winter is coming on, and as there seems no chance left her, I have now relieved her from torture, and take the liberty of sending her hind legs to you,

hoping (if you think it worth while) that you will elucidate a disorder which no one here can understand.

Your's truly,

R. JACKSON.

This had been a case of foul in the foot in which the disease had extended to the bones, producing anchylosis of the digital phalanges, and permanent lameness: the pasterns and coffin-joints of both digits were anchylosed.—D.

A CASE OF DISEASE OF THE JAW.

By Mr. C. MAY, *V. S., Malden.*

ON the 27th May last, I was requested by Mr. Ram, of Purleigh, about four miles hence, to look at a horse of his which he told me had a cancer in his jaw. I found my patient, a fine young chaise-cart horse, looking very poor, and having a constant discharge from the inferior part of the lower jaw on the left side, directly under the second molar. There was considerable enlargement of the bone, which led me to suspect disease of the tooth, which, upon examination, proved to be the case; for, upon introducing my probe into the orifice, I found that it readily went through the tooth into the mouth. Upon inquiry I was informed that this supposed cancer had been under the treatment of a farrier in the neighbourhood, and that many had been the painful caustic applications to which the poor beast had been obliged to submit for some months. As I was of opinion that no good could be done to the jaw until the tooth was removed, I determined upon attempting to extract it, and in order to accomplish this, I had an instrument made similar to the key instrument used by human surgeons, with a handle like that of an auger. Having cast my patient, and well lanced the gum, I fixed my instrument upon the tooth and succeeded in extracting it, although I found that it required nearly all the strength of which I was master. There was but trifling hemorrhage, and the *cancer* very soon got well; the only application I used to it was strong sol. chlo. calcis. The animal now carries as much flesh as his companions, and shews none of those distressing signs of pain which he was wont to do before the extraction of the tooth. I am inclined to think that our patients are more frequently the subjects of tooth-ache than we have been in the habit of supposing them. Perhaps quidding in many of them might be traced to a carious tooth.

TWO CASES OF INFLAMED VEIN.

By Mr. RIDDEL, *V.S., Barrel Dykes, Old Rain, Aberdeen.*

A two-year old colt, belonging to a farmer in the parish of Culsamond, had been bled by one of his neighbours about three weeks ago. The wound was about the middle of the neck. Inflammation took place, and when I was called last night, 27th September, I found the vein corded along the whole neck, especially towards the heart,and a little blood oozing from the wound. The extremities were a little swelled, and he was continually shifting them, more especially the hinder ones: the flanks were tucked up; the pulse 72, very feeble and soft; the legs and ears warm; he fed pretty well, and lay down as usual: he coughed sometimes, but there was no tenderness about the throat. I bled the horse, blistered the neck twice, and gave a laxative.

October 4th.—By this time the blood ceased to flow from the wound, which I thought it would be prudent to enlarge. The horse had alteratives daily until October 18. The breathing being easy, with swelling of the legs and belly; a copious discharge from the wound; and the pulse completely under the influence of digitalis, he had no more medicine given to him. Fomentations, however, were daily used after the blister ceased to act, and gentle pressure was made with the fingers along the vein, but no injection had been used.

23*d.*—The discharge stopped, but there still was swelling about the parotid, and for two inches below the division of the vein. The vein was opened with a lancet, as I expected to find matter, but the blood flowed freely from the wound for a few minutes. A smart blister was again applied, and, November 3d, the swelling had nearly disappeared.

Another case occurred in a one-year old stot. The farmer thought he was not *thriving*, and, says he, "If he be no better for bleeding, he will be no worse," and then operates himself; and to close the wound applies a clove or cliff, which is a piece of cane cut half through in the middle, and, laying hold of both ends, they bend the stick with the notch on the convex side, which admits the edges of the wound. This stick was allowed to remain on the wound three days; and about a fortnight afterwards the breathing was so laborious, that they thought it proper to call me in; but before I arrived the animal had breathed its last. The parts would have made a beautiful preparation had I skinned the animal, but that was done before I saw the beast. There was a sac formed that would contain two ounces of pus, between the wound in the skin and that of the vein, and attached to both.

so far as I could see, the wound in the vein was nearly closed, but the vein was inflamed. In the right auricle of the heart, there was pus of a cheesy consistency, and there was a slight effusion of serum in the chest.

EXTRACTS FROM MY CASE-BOOK.

By Mr. W. SIMPSON, *V.S., Southampton.*

No. VIII.

Obscure Hock Lameness.

April 2d, 1833.—The patient is a chestnut gelding, twelve years old, belonging to Captain Griffiths, who has hunted him regularly through six seasons, during four of which he has been affected with a very perceptible, and at times severe, lameness in the off hind leg. For the remedial treatment of this lameness he was placed under the care of various learned and unlearned professors of the healing art, most of whom, I am given to understand, spoke decidedly of the stifle as the injured part, and pronounced recovery to be almost out of the question; but being peculiarly adapted to the awkward country hunted by the Hambledon hounds, and, on that account, an especial favourite of his master, and a well-known character in the field, Captain Griffiths hesitated to destroy his trusty slave, as recommended by his brother-sportsmen, and determined to leave no effort untried to bring him again to the covert side in a state fit to go. From the history of the case given to me, it appears, that after a little exertion the lameness decreases, and at times almost or quite disappears; but that after rest, and when first taken out of the stable, it is very evident. Upon examining the animal the following characteristic symptoms present themselves:—the hock cannot be flexed; thus, in washing out the foot the groom does not bend up the leg towards the body, and so present the bottom of the foot backwards, but he is obliged to extend the leg forwards under the abdomen. In turning round in the stall the lameness is more evident than at any other time; the off leg is very much favoured, and the horse's weight almost constantly borne by the other leg when standing in the stable: there is no extra heat in any part of the extremity, neither can I make out the least external enlargement. Upon taking these various circumstances into consideration, and knowing the strange obscurity of hock lameness, I was soon brought to the opinion that that joint harboured the evil; and I was the further confirmed in

the opinion, by dwelling upon the very characteristic symptom of inability to flex the joint to the same extent as in the other leg. It also appeared to me, that the disease was that described by Mr. W. C. Spooner (whom I am happy to find has become a near neighbour of mine), as existing between the tibia and astragalus. With regard to effecting a cure in this case, I am far from being sanguine; in fact, it strikes me as being almost hopeless: but so great is the anxiety of Captain Griffiths, that every probable method must be tried; accordingly, the actual cautery presents itself as offering the most likely chance of eventual success. Ordered to have a dose of physic, and refrigerant lotions to be applied to the hock.

16*th*.—To-day the horse was fired severely on the inside of the hock, and more especially over the joint formed by the tibia and astragalus.

22*d*.—The fired hock blistered. Thinking that success mainly depended upon the external irritation being kept up for a considerable length of time, I ordered that the blister be repeated five or six times, at proper intervals, and that the affected part be well rubbed with mercurial ointment previously to each repetition of the blister.

September 16*th*.—Nearly five months have now elapsed since this patient was first placed under treatment. He has been blistered six times, the last having been applied about six weeks ago. Since the irritation produced by these measures subsided, the lameness has gradually disappeared, and at the present time he is perfectly sound: he can flex the joint as well as the other; his foot is washed out in the proper way; he turns well in his stall, and rests the opposite leg as much as the affected one; and, in fact, betrays not the most trifling sign of any ailment whatever. This result has far exceeded my hopes; but although now so apparently well, he may not stand a hard day's run, therefore I must wait a little longer before I pronounce success complete.

November 3*d*.—My patient this day met the Hambledon hounds at Stevens' Castle Down, twelve miles from home, when they had one of the best things of the season, but not being out myself I cannot speak of his performances: this much, however, I can say, that the affected leg stood perfectly sound, but he came home lame in the off fore foot; and I am sorry to add, that after we have got rid of an obscure lameness of five years' standing, an affair of yesterday is likely to consign him to the very dogs which he has followed so often and so well.

Remarks.—A case like the one detailed above ought to furnish an instructive lesson to us all; it speaks most pointedly of the

almost hopeless effects which may be brought about by a determined perseverance; and to me it has afforded a precedent from which I hope to profit on many a future occasion. Now, it may be a question, whether the same result would have been produced had the treatment been pursued no further than the mere firing, and its usual consequent blister. For my own part, I am inclined to think it would have failed; and I attribute the cure more to the long continued irritation than to any specific effects of the actual cautery. Every pupil at the Veterinary College must remember it having been impressed upon his mind, that firing and blistering in cases like the foregoing are always worse than useless; that they are nothing more or less than tortures, without the possibility of eventual good. Now, with facts like this, and a hundred others staring us in the face, such a doctrine cannot be tolerated. Nevertheless, no one can deny that coming, as it does, from high authority, it produces an impression on the mind of the student (especially if he has not had the advantage of seeing previous practice), which will tell most wofully against him when he enters upon country practice, and utters such nonsense before a sportsman who has witnessed the good effects of these measures over and over again. As a friend, and as a man most sensitive to ridicule cast upon my profession, I would advise the veterinary pupil not to give way to mere theories, or the ipse dixit of any man, but to observe for himself, and to note facts; and then if he finds that the actual cautery and cantharides are really injurious, let him discard them; but if, on the other hand, he sees that benefit is derived from their use which cannot be obtained by other means, let him not be deterred from having recourse to them merely because Mr. Sewell has sent forth his fiat against them.

Southampton, Dec. 23, 1833.

A VERY SINGULAR AFFECTION OF THE SKIN IN A COW.

By Mr. W. STARKS, *Westsidewood, Lanarkshire.*

I HAVE sent you a small portion of skin, or rather cuticle and hair, which came off from one of my cows last year, in the month of July. Her disease I conceived to be catarrhal fever, brought on by being over-heated. She was mostly of a white colour, with some black spots. The whole of the skin of the uppermost part of the body, from the mouth to the tail and half way down the ribs, came off, except where there was a spot of black, which always remained quite soft and healthy. The symptoms which

first appeared were loss of appetite, skin warm, extremities cold, pulse 60; which were soon followed by a hardness of the cuticle, hidebound, eyes sunk in their sockets, and great debility. After continuing in this state for some weeks, the skin began to come off, the appetite improved, and the cow began to recover. The treatment was, first, bleeding and purging, which were followed by the administration of flour of sulphur one ounce daily. We afterwards rubbed her, wherever the skin was hard, with oil; after the oil was applied a short time, the skin began to come off. She had calved about six weeks when attacked, and for six weeks that she was unwell she gave no milk. The hair about the shoulders never came on, but all the rest did. She is again in calf, and doing well.

A CASE OF OVER-DISTENDED STOMACH IN A COW.

By Mr. J. Steel, *V.S., Biggar, N. B.*

As I have been greatly benefitted by reading The Veterinarian, I think it is my duty in return to offer what is in my power to its pages; and if what I now send is favourably received, I shall endeavour to forward any remarkable case that comes in my way. I am sorry to see so few of my old fellow-pupils and fellow-veterinarians on this side the Tweed contributing so seldom, as I am sure many a good case must have occurred in their practice.

I was called in great haste, on the 20th of May last, to a cow, the property of Mr. Bell, brewer, in Biggar, and was told by the messenger that she was very much hoven, and that he thought she would be dead ere I could get down; I therefore lost no time in going, but before I got there she had fallen. A medical gentleman, who happened to be on the spot, was urged to put the trochar into her, as she had every appearance of immediate death, which he had done. When I reached the place, he told me what he had done; but said he thought he had not done it properly, as no air came away. I immediately drew out the instrument, and found that the paunch was over-distended with food. On inquiry I was told that she had been feeding on clover pasture. I was then asked what was to be done: I replied, that the only thing to be done was to make an incision into the stomach and remove the contents; and stated, if the cow was not saved by that, nothing short of it would do. The medical man agreed with my proposals, and wished me to operate instantly; to which the owner agreed, after I had informed him that not a moment was to be lost.

I made an opening into the stomach about five inches in length,

when the contents came rushing out in a large stream, and continued doing so for some time; and when it had stopped coming of itself, I introduced my hand, and removed a great deal more of it. The quantity of this indigested mass which was removed is almost incredible. After being satisfied with what I had removed, I stitched up the wound, and had the cow raised on her feet; and being afraid of inflammation taking place, as the weather was very hot, I drew a quantity of blood from her; gave a pint of olive oil and 8 ounces of Epsom salts, which acted very slightly next day.

27*th*.—No passage through the bowels; pulse 80; and the cow shewing symptoms of fever, I abstracted a little more blood, and gave a brisk purge.

28*th*.—The bowels not acted upon, and the animal not feeding. I ordered drenches of gruel to be administered.

29*th*.—The cow still not feeding, the bowels not being acted upon; the pulse 86; the legs, ears, and muzzle extremely cold. I explored the stomach again, as part of the stitches had given way, so that I readily got the point of an injecting syringe introduced, and found that a portion of the contents which I had not removed was lying in large hard masses in the paunch. I injected a quantity of tepid water, and parted the mass as well as possible with the point of the syringe; and then gave a smart dose of physic, which cleansed out the bowels.

June 1*st*.—A little better; takes a little gruel; pulse rather slower; legs, ears, and muzzle of a more kindly heat. I gave linseed tea and gruel to drink.

June 6*th*.—She is so much improved, that I allow her to go to pasture for one hour night and morning, and continue the gruel.

She was doing well up to the 12th, when the owner thought there would be nothing wrong in sending her out in the morning with the rest of his cows. She seemed not so well in the fore part of the day; but was again put out, when she went into a small brook that runs past Mr. Bell's premises, and took a hearty drink of water: she instantly became, as it were, nailed to the spot, and was with difficulty got to the cow-house door, where she fell down, and had to be carried into the house. She lay all that day, unable to rise; catarrhal fever came on, with a severe cough, and for two weeks she ate nothing, but water-gruel was daily administered with a horn. At length, after the usual treatment, she began to recover, when I gave tonics with gruel. She was very much emaciated, but gradually recovered, and was in time completely brought round. Great merit is due to Mrs. Bell, who had her nursed like an infant. The wound in her side healed kindly, and she is again in good condition.

A CASE OF STRANGLES, FOLLOWED BY THE PRODUCTION OF AN ENORMOUS MESENTERIC GLAND.

By Mr. THOMPSON, *V.S., Beith, N.B.*

THERE was a case of veterinary jurisprudence reported in the August Number of THE VETERINARIAN respecting a supposed growth in a horse, and which has caused much curiosity and interest in the veterinary world, as to the question whether such a growth existed, or was of the extent reported in the two farriers' evidences.

Having been so fortunate as to have met with a growth of something of a similar nature, and situated about the same place, and likewise of a good size, but not such as to close the rectum or fundament, which, I think, impossible from the situation mentioned, it struck me that a personal inspection of it might be acceptable to you; I have therefore forwarded to you the tumour with the intestines attached by the mesentery.

The history of the case, so far as I could learn, is thus:—A young horse, four years old, the property of Mr. Love, of Threepwood, in this parish, about six weeks ago was attacked with shivering. He was bled, and the shivering left him; but it was soon discovered that he was labouring under strangles. Poultices were applied to the sub-maxillary tumour; suppuration went on well enough, the wound gradually closed, and the animal was, up to this date (October 8, 1833), in good condition, but only the coat a little staring, which is common in strangles. He took his supper well last night, and was found about four o'clock in the morning unwell. I was sent for for the first time: and arriving about six, I found him breathing laboriously; his pulse imperceptible; ears and legs cold: auscultation was applied, when the sound was like a barrel partly empty. Blood had been drawn before I arrived; it was of the darkest venous hue, and flowed with difficulty. He did not look at his sides as in colic, nor lie down until he was exhausted, and then only thrice before death. When lying, his breathing was much accelerated; the pupils of the eyes were dilated; and he frequently moaned: no medicine was given, as I pronounced the case to be hopeless.

The horse died about twelve A.M., and was immediately opened. About three gallons of fluid were in the cavity of the belly, of a whitish colour, with some flakes of pus intermixed. The omentum was ruptured, as red as scarlet, and highly vascular. The peritoneum was slightly inflamed. The intestines

all healthy, with the exception of a few patches of inflammation. The viscera of the chest exhibited no disease. An enormous tumour was attached to the right side of the back by a short neck: its situation was between the right kidney and liver, attached to both by slight adhesions; its form, before it was cut out, was like a large kidney, and firm in texture: when cut into, some of it was like "*a cow's lure;*" but it appears to have originated from a cluster of diseased mesenteric glands. A small opening appeared in the tumour whence pus had been discharged, and it was likewise enveloped in another sac, which had also burst, and the surrounding adhesions appeared to be in a state approaching to mortification.

If you think it worth notice, I shall be happy to see it in THE VETERINARIAN, with your observations as to its nature and duration: I think its origin has been about the time the shivering fit was observed, which is six weeks ago.

This is a case of strangles in which the mesenteric glands have been attacked, and the thickened mass which surrounded the abscess, and was like a "*cow's lure,*" was the adhesive matter thrown out to form the parietes of the abscess; there is no doubt that the abscess had commenced to be formed at the time the shivering fit occurred. I have met with four or five cases exactly similar, and, beside the case mentioned in the process referred to, but which I did not recollect at the time of the examination; in most of them, however, the existence of the tumour was, at least, suspected by the loss of flesh, which almost always occurs in diseases of the mesenteric glands. In the case in the trial there seemed some reason to suppose that the farriers had mistaken the pancreas for a diseased tumour; at all events, their account was not a very intelligent one: but the judges decided, I now think, in the only way they could, namely, that as the farriers swore to a matter of fact, that testimony was not to be overturned by the hypothesis of any one, whatever their experience or observations might be, when they had not had the opportunity of examining the parts themselves. While on this subject, I may take the opportunity of correcting an error which my friend the late Mr. Castley made in quoting my remarks on strangles, and which were lately quoted by Mr. Percivall. Instead of saying, or meaning to say, that the strangles might occur on any part of the

surface of the body; I stated, or meant to state, that an abscess, in the course of strangles, might form in almost any part of the body, especially towards the surface: and I am in the habit of going on to detail the various situations in which I have met with abscesses in this disease. One case especially, which was dissected by Mr. Cheetham, who is now in London, and while my assistant, occurred in a horse belonging to Mr. Nimmo, of Gogar, which had a tumour in the mesentery fully as large as that above described, and which I then referred to. I regret extremely to have occasion to mention this after the death of my friend Mr. Castley, and would rather have allowed it to pass, had not the present occasion occurred. At the time his letter was written I intended to have noticed it, but expected that I might have had the opportunity of doing so in communicating with him on subjects which might have been of more importance; but in this, alas! I was too grievously disappointed.

I may just mention that I was a few days ago informed by a gentleman residing near Cupar, Fife, that a horse of his had died a few days before, about which I was consulted some time previously, and in which was found, as I had prognosticated, disease to a great extent of the mesenteric glands, the sequel of strangles. I may also add, that this summer I found in a case in which I was under the necessity of performing tracheotomy (and which for two weeks was the means of saving the colt's life, by obviating the effects of the tumour in the neighbourhood of the larynx) an abscess in the anterior portion of the mediastinum dorsale, which proved fatal after the other parts had almost entirely recovered. I may observe, that there is reason to believe that the lymphatic vessels and glands are often principally concerned in the origin of the disease. It was not surprising that Mr. Castley mistook me, as he dwelt at length on the cases which occurred near the surface of the body.

D.

COLLEGE REMINISCENCES.

By PAUL PRY.

First Admission to the College—Mr. Coleman — Introductory Lecture—Grooms and Surgeons—Comparative Anatomy.

> " A chiel's amang ye takin notes,
> And faith he'll prent it."

ADDISON has said that an author should take all methods to humble himself in the opinion he has of his own performances. I can with truth declare that I have this impression as strong upon me as ever Mr. Vines, the assistant demonstrator of the Veterinary College, had when he sent his last bantling, in the form of an appendix, forth to the world. After this avowal, and I am convinced you will call it a modest one, I can certainly hope that my Reminiscences will be received with indulgence.

Almost every one now writes something: the *scribimus indocti doctique* was never in greater force:—

> " —— Those who cannot write, and those who can,
> All rhyme, and scrawl, and scribble to a man."

The most difficult part of my performance is to know how to begin well, and here I am bothered. How shall I begin? " *Belier mon ami,*" says the giant to the historiagraphical ram, in one of Count Anthony Hamilton's tales, " *commencez toujours par le commencement.*" As no advice can be more reasonable, I shall comply with it, and enter at once into the subject.

I could easily inform my readers how very pleasant and ingenious I intend to be, but decline proving it beforehand. The greater the flourish of trumpets now-a-days, the more suspicions what follows: whatever, therefore, it may be my luck to turn out, I at least wave the privilege of having the way prepared by my own mouthpiece. If I succeed, so much the better; if not, I shall at all events not die of the " previous question," like an honest proposal in parliament.

The fact is, I have hated every thing in the shape of a prospectus ever since I read Mr. Vines' publication on glanders. Certes I ought to have known better than to have trusted him, for I feared the man of promise at first. " *Quid dignum tanto ferret hic promissor hiatu?*" Surely it may now be said, " *Parturiunt montes; nascetur ridiculus mus!*"—But enough of this.

The writer was intended from his birth for the medical profession. His father, after giving him a liberal education, bound

him an apprentice to a surgeon and apothecary, at whose domicile he toiled at the pestle, drew teeth, and bled; and, after a few months, prescribed and prepared medicines for all the poor patients in the district. Young minds are often formed by circumstances, and our destinies

> "Shape our ends, rough-hew them how we will."

This proved true in my case; for after serving five years, the period of my apprenticeship, I was induced to give up the idea of being a second W. Hunter, or a Cooper, and to turn my thoughts to the veterinary profession. My father, seeing so many surgeons practising in his neighbourhood, and only one veterinary surgeon (the former, with one exception, ready to eat each other up, and striving hard for a maintenance, whilst the veterinary surgeon was in full practice, and making a fortune), persuaded me to become a pupil of Mr. Coleman instead of Abernethy.

The pupils at the College, at the period I entered, were a singular compound: every county in England must have sent a few; nor were the sister countries behindhand. Some had the appearance of gentlemen, some looked like grooms, stable-boys, and horse-jockeys, and many appeared to belong to that honest and respectable class called blacksmiths. Nearly eighty pupils attended Mr. Coleman's introductory lecture. The Professor was some time before he made his appearance, and the interval was employed by the different groups in congratulating each other on their reappearance at the College. Suddenly the noise and din of tongues was stopt by the entrance of the Professor. From his figure and gait, I judged him to be between sixty and seventy years of age. His walk, attitude, and gesture, were those of a man confident of himself, a little addicted to be indifferent to others, and far more disposed to lead than to follow. He appeared in haste,—

> With speed that ent'ring speaks his haste to go,
> He takes his seat, and opes his portfolio;
> Then bids the gazing youths around him fly,
> And carries fate and physic in his eye.

His lecture was every thing but satisfactory to me, inasmuch as it informed me that blacksmiths' sons and stable-boys made the best practitioners, whilst medical men rarely succeeded. "Long habit," he said, "had enabled him confidently to tell who will and who will not succeed." Here were all my hopes and brilliant prospects blighted almost in a moment—the spell was broken; the halo my imagination had thrown around me was fast dispersing; and, had I not already paid my twenty guineas,

the entrance fee, I should certainly have bade Mr. Coleman, his pupils, and the College, adieu for ever. I had foolishly considered that my knowledge of medicine and human surgery would have given me an advantage over those who had not obtained such acquirements: but "such learning," says the Professor, "is not called for in the veterinary practitioner." I was fond of horses and dogs, could ride tolerably well across a country after the hounds, but I could not shoe a horse, nor had I ever attempted to clean one. I had bled a horse twice or thrice, and had often administered balls; but this was the extent of my practical knowledge.

The reader will perceive that my veterinary aperçus at this period was not astonishingly luminous; but, notwithstanding the bad encouragement Mr. Coleman gave me of succeeding in my new profession, with the happy alchemy of youth, which can extract sweet honey from bitter flowers, I set about it with a hearty good will, and determined to persevere.

Thank heaven! I had not been endowed with one of those thorough-bred, snorting, champing, foaming sort of intellects which run away with common sense, and who is jerked from his saddle at the beginning of his wild career: mine was a good steady, useful hack, which trots along the high road of life, keeping on his own side, and only stumbling a little now and then when I happen to be careless,—ambitious only to arrive safely at the end of his journey—not to pass by others.

By the advice of a pupil, I obtained Blaine and Percivall's works on veterinary medicine; and Richerand and Bichat on physiology. I paid particular attention to the different patients in the College, and never missed an opportunity of attending the lectures of *old Cross* on morbid anatomy, when any of them were unfortunate enough to die.

By these means the pupil will acquire a knowledge of morbid anatomy, which he never will have an opportunity of gaining in a country practice. The importance of pathological or morbid anatomy I need hardly impress on the pupil. He who has the advantage of comparing the symptoms, or the external signs, which he observed during life, with the morbid change of structure visible on inspection after death, learns with exactness what the external sign denotes; that is, what state of the internal organ it expresses. Having this knowledge, he knows with exactness what to attempt by the remedies which he employs; among numberless remedies he knows which to choose, as being the best fitted to accomplish the end in view; and his remedy being chosen, he knows the proper strength, the proper time, the proper frequency,—in a word, the proper mode in which to exhibit

it. He does not work in the dark. He has a definite purpose to accomplish, and an instrument of known power with which to accomplish his purpose.

I likewise visited the knackers at Smithfield twice a week, where, in spite of the obstacles thrown in my way by *Mister Martin, of Galway,* M.P., I acquired a skill in performing most of those surgical operations that were likely to occur in my practice. I mention these things *en passant,* as they may be of service to other young men, situated like myself, who never had the *good luck* to have served as a groom in a nobleman's stables, or worked at the forge for seven years prior to his entering the College walls;—men who, according to the professor's ideas, possess a kind of intuitive knowledge of horse flesh, as a vulture does of a dead horse that dies in the desert. But I am rambling rather from my subject.

The Professor, in his introductory lecture, uttered a long tirade against comparative anatomy: "he disliked it," he said, "because that comparative anatomy oftentimes led to comparative physiology and comparative pathology." He considered the horse as the only study of the veterinary pupil. Alas! how many of my brethren have found the want of the very knowledge which the Professor condemns *ex cathedrâ!* I have been informed, that he still utters his anathemas against this most useful and important science, but in more guarded language than formerly. I can safely and advisedly assure the veterinary pupil, that, if he wishes to practise his art in all its various branches, *he must be a comparative anatomist.* He must be acquainted with the structure of the ox, the sheep, the swine, and the dog, as well as that of the horse. "Comparative anatomy," says Mr. Lawrence, "bears the same relation to the veterinary art that human anatomy and physiology do to medicine." The peculiarities in the organic structure and functions of particular genera or species lead to corresponding peculiarities in their diseases and derangements. Hence, a rational treatment of the disorders incidental to animals presupposes a knowledge of the generic and specific characters of internal organization. It seems superfluous to adduce the digestion of the ruminant order, or other analogous instances, in illustration of a truth so evident in itself. Indeed, to attempt to form proper notions of the seat and nature of the diseases of the various animals that properly belong to the practice of a veterinary surgeon, and likewise of the operation of remedies, is out of the question, without a knowledge of the general construction of the frames of his patients. Perhaps, indeed, a firm faith in drugs and plasters, and a liberal administration of them, may be the surer road to fortune; but he who wishes to

practise successfully, and has a view to its rational improvement and extension, *must study comparative anatomy**.

Perhaps many may consider the above remarks as unnecessary; but when I think of the importance of the subject, and the effect that is likely to be produced on the minds of veterinary students by such a lecture, I cannot, nor will not, mince the matter.

Mr. Coleman is now "stricken in years," having passed the grand climacteric of life, and, with the exception of the gout, I believe has been free from many of those infirmities which oftentimes accompany old age. And though

> Time hath laid his temples bare,
> And chang'd to white his once dark hair,

yet he possesses, or at least at the period I allude to did possess, to the fullest extent, all that the author of the oft quoted "sana mens in corpore sano" could have desired in his most poetic aspirations, sanity of mind; and, as I said before, with the exception of the gout, soundness of body.

Were I to attempt a description of his person, I should commence by tracing the outlines of a man a little below the middle stature; his features irregular, yet peculiarly expressive in the aggregate of intellectual energy, mingled, at times, with a deal of the severity of thought: indeed, I have witnessed so much of the latter, as to lead me to suspect that other agents more powerful than the love of study, or a passion for physiological discovery, had been working there.

The early part of Mr. C.'s professional career was devoted with ardour to the improvement of the veterinary science. I have been told that he had an early predilection for his present pursuits: whether that be true or not, I am convinced that they must have been entwined with the strongest affections for a long time, the very food of his meditations, if I may judge from the abilities he possesses.

There is an old adage, that "after the old are gone there never comes better." I believe that there are few in the profession but will agree with me, that Mr. Coleman's abilities are equal to his situation. I hope that the present assistant professor may in due time succeed him in his abilities as well as in his situation. It certainly must be no small object to him to finish his career in that place from whence in the spring tide of youth and hope he started into the turbulent scenes of the world—to rule in that place where once he served—to succeed to that chair which

* I have lately seen, with pleasure, the commencement of a Course of Lectures, published in *The Lancet*, on this important branch of Veterinary Science, by Professor Grant, at the London University.

his master and predecessor in office had occupied. But of the deputy more anon.

I hope that the few remarks I have made on Mr. Coleman's introductory lecture may not be considered irrelevant. The Professor has his reasons, without doubt, for discouraging the man of education, and for flattering the vanity of grooms and blacksmiths; but the present leading men in our profession shew the fallacy of his opinions. To minds ill directed, or narrowed by the want of education (as grooms and blacksmiths usually are), the beauties which nature presents in boundless variety are blank and unmeaning prospects; and though some, nay, many of them, possess good natural abilities, yet they are as the diamond from the mine, which wants the artist's skill; and here I question the efficacy even of the Professor's lectures to bring out and display their brilliancy.

Liberality of sentiment encourages merit and fosters genius; a jealousy of excellence creates envy, which ever detracts from the qualifications of others and stifles rising talent. It is a pleasing reflection to survey the improvements which of late have been manifested in the various branches of science, and to contemplate the general benefits which the patronage of the liberal minded has conferred upon mankind. But in this review my satisfaction is not unmingled with regret, when I discover that equal advantages have not been extended to the veterinary profession. I hope Mr. Coleman will yet take the hint; he has power, if he chooses to exercise it.

Misrule never exulted in a long reign, and I hope a brighter sun will dispel the clouds which have so long obscured the horizon of the veterinary science. Liberality will usher in genius, and triumph, and humble merit will assert its prerogative, freed from the fetters imposed by self-interest and rivetted by ignorance.

THE VETERINARIAN, FEBRUARY 1, 1834.

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

VETERINARY MEDICAL JURISPRUDENCE.

OUR readers will not be displeased at our adopting the following oration (delivered by Professor Renault, at the public distribution of diplomas and prizes at the Royal Veterinary School of Alfort, August 28, 1833) as the *leading article* of the

present moment. It will be seen that Veterinary Jurisprudence has been shamefully neglected in his country as well as in ours; but when the heads of the profession are beginning publicly and zealously to bestir themselves, we may hope for reformation there, and we may likewise hope that our professors will begin to feel the propriety—we would rather say, the necessity—of placing our medical jurisprudence on a more intelligible and rational, and, consequently, a firmer basis. The decisions of our surgeons—nay, of our professors—are, too often, quite as much at variance as the "usages" of the different provinces of France.

EDIT.

Mr. President and Gentlemen,

BEFORE I narrate the transactions of this school during the last year, permit me to submit to you some rapid reflections on a subject, the importance of which, I hope, will supply the deficiency which must result from my inexperience. I would speak of the actual state of our laws with relation to the soundness of domesticated animals, and as applicable to commerce—a grave question this, and one of high importance without doubt in political economy, since it involves the interests both of agriculture and commerce.

Being the organ, at the present moment, of the opinion of all my colleagues, the interpreter of the wishes of veterinary surgeons in all parts of France, I wish that I may be able so truly and faithfully to sketch this part of our legislation, as to convince you, I will not say of its insufficiency, but of its deplorable effects on commerce, as it regards all our domestic animals, and more especially the horse.

Anteriorly to the publication of the Civil Code, warranty, as as applicable to the sale of animals in every part of France, was regulated by *usages*, the origin of which is lost in the night of time. There was no unsoundness except that which was recognized by usage, and usage also prescribed the time within which an action on the warranty could be brought.

To speak of the distant time when these *usages* commenced would be to prove that they must of necessity have been imperfect, and that they could consist only in prejudices and errors. In fact, by whom where these unsoundnesses first determined in times of the most complete ignorance of the veterinary art? Why, certainly by men who were then supposed to be best acquainted with these animals. It was the grooms, the farriers, and the herdsmen of those periods, to whom the judges were

compelled to apply, in order to ascertain whether the animal in dispute had or had not the defect which was suspected to belong to him, and whether this defect was so serious as to be termed unsoundness.

According to the decision of these scientific personages, the judges formed their opinion; and, from many similar decisions, arose those *usages* which, for many ages, were preserved only in common tradition. In aftertimes these traditions were, in some districts, reduced to writing. I ought, however, to state, that this written law was never acknowledged in France generally; and that, to the present day, in a great part of the kingdom, tradition is the only foundation of *usage*.

For a long time unsoundness was invariably that which *usage* had made it in each locality; except that, from time to time, during the last century some new cases were admitted by divers parliaments, and inscribed among the *usages* and customs of the country. Nevertheless, however, and in spite of the representations and protests of veterinarians, little or no change took place with regard to the previous *usages*, and throughout the whole of France they continued to constitute the law of the case.

At length the civil law appeared, an imperishable monument of the legislative wisdom of the first years of the nineteenth century.

The articles on warranty, which had reference to the concealed faults of the animal, were received with satisfaction by all the friends of agriculture, and particularly by veterinarians; for they saw there circumstances and facts placed on fixed and equitable principles, which ought to unite in order to constitute unsoundness and to annul the purchase.

According to the article **1641**, all concealed faults existing prior to the sale, and sufficiently serious to render the animal unequal to the service for which he was destined, or which diminished his value so much that the purchaser would not have bought him if he had known them, constituted unsoundness.

According to article **1647**, diseases concealed, or not apparent at the time of sale, occasioning the death of the animal, and being recognized on opening him, constituted unsoundness.

As to the time which was allowed to the purchaser to bring his action for unsoundness, it ceased to be the same in every case. Its duration, which ought to be as short as possible, was regulated by the nature of the unsoundness. And here the legislature had good reason for this alteration; for there are some defects which the purchaser requires only the morrow, or the day after, in order to discover; while there are others which it is impossible for him to be aware of until the animal has been fifteen or

twenty, or even thirty days in his possession; although they actually existed at the time of sale. I shall presently have occasion to adduce examples of these. What can be more equitable or just than these arrangements? What more easy to establish than harmony between these grand principles and honourable commerce in domestic animals?

Nevertheless, I will affirm that, after the publication of the Civil Code, *usage* and custom continued to regulate the warranty. With or without reason, the greater part of the French tribunals pretended that *usage*, far from being abolished, was expressly preserved by article 1648, and they persisted in their old method of adjudication. Others, and unfortunately the fewest in number, adopted the principles laid down by the code for the determination of unsoundness; but, influenced by considerations, the folly of which I could easily prove, they rejected a portion of the time of the warranty, and preserved that only which *usage* had fixed: among these I may cite, principally, the tribunals of Paris and of Lyons, who had been the first to set an example of reform.

In the mean time government had felt the necessity of putting a period to a state of things so prejudicial to the great interests of agriculture. In the project of the *Code Rural*, which was presented, in 1808, to the Council of State by order of Napoleon, that which would constitute unsoundness in animals was determined through the whole of France; and the period of warranty was fixed for every one of these defects according to their nature. But for reasons, into which this is not the place to inquire, *the Code Rural* always remained a *mere project*.

On the other hand, the veterinarians proceeding from the schools of Alfort and Lyons, penetrated by the principles which were there enforced, and well convinced of all the defects and injustice which the legislation according to *usage* contained, endeavoured, in every case in which they were concerned, to induce the judges of the districts which they inhabited to adopt the mode of jurisprudence followed by the tribunals of Lyons and Paris. In some places they succeeded; and, perhaps, with time and perseverance, founded as their reasonings were on the principles of evident equity, and appealing to the daily decisions of the two grand centres of French commerce, perhaps, I say, they would at length have produced some useful reform.

But, by a sudden return to the old system, the motive or the propriety of which nothing can explain—derogatory to the rule which they themselve had made—to the jurisprudence which they had created—and which, by their salutary example, had extended on every side, some of the judges of Paris have recently

decided, and that in many judgments, that there can be no unsoundness except what is recognized by the *usage* of the place.

Where, then, is the clue that will guide us through this labyrinth? Alas! in a branch of commerce so important to France as that of domestic animals, the confusion is so great on this point, that the judges themselves, the organs and the ministers of the law, do not know whether it exists, or how to explain it.

Is not this, in effect, what is now passing under our eyes? In some distrists of France *usage* alone is all-powerful, in spite of the equity upon which it tramples, and which it despises. In other districts the article 1641 of the Civil Code serves as a basis by which to appreciate the unsoundness, and *usage* is that by which the duration of the warranty is measured. In the latter, the least numerous it is true, the principles laid down by the code are the exclusive basis of all their judgments. In the former, notwithstanding their having adopted the *usage* as their guide, and afterwards, and for many years, the spirit of the articles 1641 and 1648, they have within a few years repudiated these latter without any appreciable reason, without any avowed motive, once more to establish a jurisprudence which they had long condemned and abandoned. That which is the most disgraceful of all is, that at the present day, and at Paris, while one section of the Tribunal of Commerce decides that the code has abolished *usage* with regard to unsoundness, another section has pronounced that it has preserved it. What chaos! What anarchy in the law! What a source of incertitude and ruinous expense for buyers and sellers! and what insecurity for commerce!

You will not expect from me, gentlemen, that I should here agitate the difficult and important question, whether the *usage* of places, as it regards warranty, is or is not abolished by the code. Whatever may be the opinion of veterinary surgeons on this point, they are scarcely competent to decide such a question. But it is a fact that *local usages* are still observed in most of the departments of France; and that, in some of the tribunals which have not been guided by them, we cannot fail of remarking a manifest tendency to return to them.

It is necessary, then, to examine into their application to the purchase and sale of animals; and it is on this point, on which no persons can be better judges than veterinary surgeons, that I feel myself naturally led to speak.

Not to insist for a moment on that indisputable principle, that uniformity is one of the most indispensable characters of good legislation, we cannot look over the table of *usages* and *customs* traced by Gohier, without feeling great difficulty in believing that such a diversity in the laws of our country could exist on

any point, and more particularly on a case of incontestible identity. We see with astonishment that that which is permitted in one part of France is reprobated in another; that the regulations on a subject of every day commerce bear no resemblance to each other in two neighbouring provinces; nay, that they are often different in the same province, and even in the same canton.

With the exception of two or three diseases that are acknowledged to constitute unsoundness in almost every country, the greatest diversity reigns: for example,—roaring and founder, which would afford ground for action as unsoundness in Artois, are not included in the warranty in the province which borders on it—Cambresis. Thick wind, for the discovery of which a delay of forty days is allowed in the latter province, has only fifteen in the former. Farcy is unsoundness in Brittany, but not in the neighbouring province of Normandy; and, on the other hand, the customs of Normandy make mention of some diseases of the horse and the sheep which are completely forgotten in those of Brittany. In Brittany the duration of the warranty for glanders, broken wind, and founder, is fifteen days; it is thirty days for the same diseases in Normandy; nine in the Isle of France; eight only in Burgundy; and forty in Franche Comtè. But I forbear more citations of this kind, which I could multiply to the greatest extent.

It has been said that differences in the respective localities ought to produce differences in the customs; and that, if the law were uniform, it would be often unjust. This argument, the only plausible one that has been adduced to establish the necessity of preserving the customs, and which, perhaps, would be decisive if applied to other commercial matters, has not the same weight when examined with reference to the purchase and sale of domestic animals. Hear what one of our colleagues, M. Bernard, of Toulouse, says on this point.

"It is admitted among veterinarians that the nature of the malady varies little with difference of locality; these influences may render a disease more or less frequent, or modify its severity, and even its duration; but they cannot change its nature when considered with reference to veterinary jurisprudence. They cannot render a disease apparent whose symptoms are obscure, nor that non-contagious which may be communicated. It cannot prevent such diseases as immobility, epilepsy, and ophthalmia, from being altogether of a serious character, and incurable, and rendering the animal that is affected by them more or less unfit for the service for which he is destined."

In fact, how can it be explained, that, in two districts so near and so similar in their local influences as Artois and Cambresis,

the disease of the chest, which we designate under the name of *courbature*, should be unsoundness in one, and not in the other? This, however, is the fact. How can it be explained by any influence of locality, that a delay of forty days should be granted in Lorraine to detect glanders and broken wind, and that nine days should be considered as sufficient for the same purpose in Champagne?

But let this be so, and *usage* considered in relation with the localities that govern it; let it be as well founded, and as just, as in point of fact it is deficient in these respects, it would not the less result, that, in the actual state of our commercial relations, the legislation which consecrates it would be most objectionable. A few examples will sufficiently illustrate this.

It is an invariable fact with us, that few domestic animals always remain in the district which produces them. There are in France five or six breeding districts, from which all the others are supplied: for example,—the greater part of the horses which are bred in Le Boulonnais are transported to Normandy, where they are reared until they are three, four, or five years old, and then bought by the merchants of the different departments, by whom they are distributed over the whole of France.

Suppose that two horses with incipient *immobility* are purchased at the same fair in Normandy, by two merchants of different districts. In about five or six days one of these merchants sells his horse at Paris, and the other sells his at Rheims. On the following day the purchaser at Paris, and the one at Rheims, perceive that the horses which they have bought are affected with immobility. Both of these immediately commence an action on the warranty against the seller. Observe what results: at Rheims the tribunal cannot deny that the demand is founded on *equity*, since it results from the certificate of the veterinary surgeon, that immobility is a disease extremely serious as it regards the horse, dangerous to the purchaser, and which may by its nature not be observed at the time of purchase; but considering, in point of *law*, that immobility is not unsoundness *according to the usage* for Rheims, it is decided that the purchaser has no redress. The purchaser at Paris is more fortunate; the judges of that city condemn the merchant to take back his horse, not on any ground of equity, but because immobility is unsoundness *according to the custom of Paris.* Is this, then, equal justice? or if the purchasers have common sense, can you make them comprehend that the horse which is judged to be unequal to the work of a coach-master at Paris, because he has immobility, is with the same defect equal to the work of a coach-master at Rheims? Where in this case is the influence of loca-

lity? These two horses were bred in the environs of Boulogne; they were reared in the district of Caux; they have remained only three days, the one at Paris, and the other at Rheims. The history of these two horses contains that of a hundred others that I could cite.

But let us follow the merchant who has been forced at Paris to take back the horse which he might have sold without danger in other districts. Assisted by the promptness of the judgment which condemned him, and aware that the time allowed by the warranty is not yet expired, he betakes himself in all haste to Caen, the residence of the seller; he pleads,—he loses his cause: *the usage of Normandy does not admit immobility in its list of unsoundnesses.*

What a singular position is his! condemned by the judges of Paris to take back a horse which he had sold, because it had immobility; condemned by the judges of Caen to keep the same horse, although he evidently laboured under that disease. What shall he do with such an animal? shall he sell it for what it is, and for what it will fetch? Equity demands this, and it is that which the law also should prescribe. But since his double misadventure, he has inquired about these *usages*. Having been deceived himself, he has discovered the means of deceiving others. He starts for Orleans, and he there easily finds a purchaser; and when at the end of some days the unfortunate and simple villager, who, perhaps, had parted with some of his wheat to complete the purchase, comes and tells him that his horse has a defect which prevents him from being of any service to him, our merchant confesses the fact; but he shews him the *custom* of Orleans, and the poor countryman returns half ruined, beginning to apprehend that which he did not know before, that, in his country, they have certain customs relative to unsoundness in horses, and that among them immobility has no place.

When breeders or agriculturists have a horse which they know to be unsound, according to the custom of the country in which they live, that animal is of diminished value in their estimation, in proportion as the defect which he has is serious, or interferes with his use. Certain merchants know this well, and make a trade of searching out these animals. They buy them at a low price, and they thus find a method of realizing very great profits; for they go and sell them in districts where the defects under which they labour do not constitute unsoundness. Thus, for example, one of these honest dealers, who knows of a fine horse affected with ophthalmia, belonging to a farmer of the department of Geres, buys him for 60 or 80 francs, because ophthalmia in that country is unsoundness: some days afterwards he

sells him again for 600 or 700 francs, in the department of Dordogne, the custom of which does not acknowledge glanders, or broken wind, or founder, as unsoundness. Thus, also, an epileptic horse is purchased at a good price, in the department of Ain, and if he has a good figure, he is sold still dearer in some other department; for the custom of Brest alone ranks epilepsy in the horse as unsoundness.

Far from the law punishing or restraining this shameful traffic, these scandalous and dishonest speculations, it is the very law which encourages them, and enables them to be carried on with impunity. It is the efficacious protection of the law which perpetuates them.

[To be continued.]

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

Advice to the Purchasers of Horses, &c. By J. STEWART, *Veterinary Surgeon, and Professor of Veterinary Surgery in the Andersonian University.*

THIS little work contains much that will be useful to the class of readers to which it is addressed, and to horsemen generally; for it not only touches on all the points of unsoundness, but gives an outline of the general conformation of the horse. There may not be much original matter—the subject in a manner precludes it,—but the style is simple, and the observations are, in general, well founded.

We may probably, hereafter, review the work somewhat at length; but we are stopped, peremptorily stopped, by an advertisement that has accidentally fallen into our hands, and which we insert at length, as one of the most complete specimens of unprincipled puffing that we ever saw. Our readers will preserve it as a perfect unique:—

"ADVICE TO PURCHASERS OF HORSES; being a short and familiar treatise on the exterior conformation of the Horse, the nature of soundness and unsoundness, the laws relating to sale and warranty, with copious directions for discovering unsoundness prior to purchase. By J. STEWART, veterinary surgeon, and professor of veterinary surgery in the Andersonian university.

'The buyer hath need of an hundred eyes,
But the seller of only one.'

"The numerous publications which have of late years appeared upon 'the Horse,' and the pompous manner with which they have generally been heralded into existence by puffing publishers, and, above all, the quantity of trash with which these volumes have invariably been filled, led us to take up the above 'Advice' with some reluctance, and with a decided prejudice against it. We have been, however, most agreeably disappointed in this instance. The author of it, Mr. Stewart, of the Andersonian University, Glasgow, seems to be a very sensible fellow, and handles his subject in a very masterly strain. He has evidently, from the manner in which he writes, *practised* the healing art he so feelingly describes. We would venture to assert, that there is not one of the thousand Advices, contained in this little work, but Mr. Stewart gives from his actual performance. It is melancholy to think, that the whole reading public (for everybody now has to do with a horse, in one way or another) should be led by the nose in so important a matter as the confused and diffuse scribbler in the Library of Useful (Useless) Knowledge, or Hind, or White (who seem to know *nothing* of what they write), or that they should be guided by such old wives as Drs. Clater and Percival. Thanks to Mr. Stewart and his modest little volume, the days of these worthies are gone by; and, in all time coming, he will be the consulted physician in all matters connected with, or concerning, that valuable domestic animal, the horse. We would recommend no person to purchase a horse, without having purchased and perused Mr. Stewart's Book of Advice; and if, after doing so, he is still deceived by horse jockeyism, we will pronounce him the most incurable blockhead on the face of the earth—and we would recommend every person who *has* a horse, or who is in the habit of using a horse, to read this book, that he may neither be made to lose nor abuse it by bad treatment. This is, without exception, the most complete, the most concise, and the most popularly written medical volume, that we have fallen in with for many years, and that is saying certainly a great deal—but by no means more than we are warranted in saying of Mr. Stewart and his book of Advice. —*Glasgow: W. R. M'Phun, printer and publisher.*"

That this proceeded from the pen of Mr. Stewart we cannot for a moment believe. We would fain hope that he was ignorant of its existence. That ignorance, however, no longer remains, and we call upon him, as he regards his future acceptance among his veterinary brethren—among the professors of the Andersonian University—and, indeed, among honourable men, at once and unequivocally to disown it. If the book is no longer his property, let the disgrace fall where it ought; and let

not the name of the professor of veterinary surgery in the Andersonian University of Glasgow be a by-word and a proverb among us.

Miscellanea.

A Lecture on Old Horseshoes.

When *Opay Mico*, one of the Indian kings, from the Creek country, arrived in New York, the residence at that time of Washington, and the great council of the *thirteen fires*, his attention was very much attracted by those huge floating machines, in which the white men pass over the immense waters from country to country, and to those remote limits where the great star rises over the regions of the east. Whilst his imagination was busied in contemplating the wisdom and sagacity, not only of those who have with so much art constructed those machines, but also of the men who are entrusted with the management and direction of them on the face of such a dangerous element, "How," said he, "is it possible for them, when once they have left the main shores, to direct the prow with so much art and precision to some small spot of earth, placed like a hill in the midst of unfathomable waters?"

Such was the reasoning of the mighty chief Opay Mico. He determined to go on board one of those mighty and curious machines, to make some inquiries on the subject. In company with his interpreter he went on board one of these big canoes. The captain endeavoured to make him comprehend the use of every part of the furniture that was subservient to the navigating and manœuvring of his vessel. Opay Mico being a man of great observation and discernment soon comprehended the use and design of the greater part of the objects that he saw. At last, directing his observations to the lower extremity of one of the masts, he observed a thin piece of iron, of a form approaching to circular, and pierced with several small holes thereupon. On questioning the captain, what could be the use of this flat semicircular metal, the captain informed him that the iron which had so much attracted his attention was no other than a common *horseshoe!* On being asked by Opay Mico of what possible use or advantage it could be to the ship, the commander at first seemed confused at his question, but, instantly recollecting himself, he invited him to set down on his wigwam, and then addressed him as follows:—"You must know that there is a wonderful connexion and sympathy between the things above

and the things below,—the invisible parts of the animated creation, and those parts that are visible. Among the invisible intelligences there are not a few orders that take a supreme delight in injuring mankind. It is these that wing the hurricane, scatter the seeds of pestilence through the air, and blast the fruits of the earth. Against these it is our duty to be upon our guard, and, by every method we can devise, to repel the shafts of their vindictive malice. Time was when men wandered over the ocean without the knowledge of the virtues of the *horseshoe!* These ignorant times are past and gone. With this inestimable horseshoe for a companion, we can traverse the seas with safety.

"This shoe will be of no avail against the malignant powers if taken new from the blacksmith's anvil, but must have travelled many hundred miles attached to the foot of the animal. It is our custom also to place the open part downwards, as by this method the shoe represents an arch (which is a token of strength), as well as the rotundity of the heavens over our heads, which are fixed, durable, and to last for ever. The horseshoe receives some of its virtues likewise by passing through the fire.

"But it is not employed only for the preservation of ships; it is used by farriers and veterinary surgeons in curing vicious horses. When one of those valuable animals becomes affected with the mad staggers, which is a disease produced by the vindictive malice of the evil one, it is invariably cured by the shoes being taken off and placed in the fire, and the witch or warlock is speedily under the necessity of removing the spell under which the animal suffered.

"We have likewise a further proof of the efficacy of the horseshoe in the manner of reclaiming bewitched milk. On the return of the milkmaids from the loaming with their milkpails upon their heads, when the foremost takes down her vessel in order to pass under the doorway, the mistress is ever ready to drop a horseshoe heated redhot into the milk. A horseshoe is likewise commonly nailed upon the doors of the cow-houses, that the Devil, if he attempted to enter, would be certain to burn his fingers. And it is not only in America that the virtues of the horseshoe are known: we first derived the knowledge of its virtues from our mother country, England; but even in the East it is used for the same purpose. Even the poor and effeminate Chinese have discovered its wonderful nature, for they have their tombs built in the shape of a horseshoe, that the evil spirits may have no power over the dead. The English were not the first people who discovered the wonderful virtues of this shoe; for we have reason to believe that the Goths, a barbarous nation, who overran the Roman empire,were the first people who manufactured this useful piece of horse furniture."

The mystery being thus in some sort explained, Opay Mico bade farewell to the master of the great canoe, though not without amazement, when he considered the almost universal influence of folly and superstition over the minds of the enlightened Europeans.

"Such is the wisdom," he said, "of the white men. They laugh at us for our credulity, in maintaining some scores of *paw-was*, to avert, by their howling and lacerations, the vengeance of the great evil being. They despise us for believing in our good and bad *monetas*, and paying a superstitious reverence to certain animals in the forests:—they call us rude, savage, and unenlightened, at the very instant when they themselves are putting their trust in old horseshoes!

Jonathan in England.

PRIVILEGES OF THE KING'S SMITH.

ONE of our historians observes that, immediately preceding the Conquest, the art of working in iron and steel had risen to such a state of improvement, that even the horses of some of the chief knights and barons were covered with steel and iron armour. Artificers who wrought in iron were so highly regarded in those warlike times, that every military officer had his smith, who constantly attended his person to keep his arms and armour in order. The chief smith was an officer of considerable dignity in the court of Anglo-Saxon and Welsh kings, where he enjoyed many privileges, and his waregeld was much higher than that of any other artificer. In the Welsh court, the king's smith sat next to the domestic chaplain, and was entitled to a draught of every kind of liquor that was brought into the hall—a privilege that many artificers of our own day will not be disposed to make light of.—*Lardner's Cyclopædia.*

TO CORRESPONDENTS.

WE must intrude on the forbearance of some valued Correspondents, whose communications shall appear in the next number.

Mr. Jackson's favour was received, and shall appear in some form, but in its present one it is an advertisement.

We perfectly agree with Mr. B—, that it was unprofessional and shameful conduct. His letter shall appear with the names undisguised, or a mere outline of the affair shall be sketched: he will tell us which he prefers. We can have no squeamishness in such a business.

Mr. Friend's parcel has arrived, and is most welcome. He shall hear from us.

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MR. YOUATT'S VETERINARY LECTURES,

DELIVERED AT THE UNIVERSITY OF LONDON.

LECTURE XXXIX.

The fifth Pair of Nerves, their double Origin and Function.—The Structure of the Spinal Marrow, and double Root of the Spinal Nerves.—The Origin of the Fibres conveying Sensation from the superior Surface of the Chord, and of those connected with muscular Motion from the inferior Surface.

The Double Origin of the Fifth Pair of Nerves.—The *Trigeminus* or fifth pair of nerves has been described by our anatomists as springing by a multitude of filaments from the crura cerebelli, and forthwith running for security into the cavernous sinuses, and there suddenly enlarging into or passing though a ganglion. Human anatomists, however, had long spoken of the *double origin* of the fifth pair; and the researches of some modern physiologists, and particularly of Sir Charles Bell and Mr. Mayo, have attached great importance to this double origin. The experiments were made on our patients, and therefore we have a legitimate right to refer to them, and to reason upon them.

The Difference between the two Roots.—The double origin of the fifth pair is plain enough in this dissection, as well as the inequality in the size of the two roots, the inferior one being very much smaller than the superior; likewise the difference in the structure of the two, the fibres or fibriculi of the superior root being much larger than those of the inferior. On examining a brain that has been long macerated in alcohol, and thus more easily resolvable into its fibrous structure, the smaller portion can be traced through the pons varolii to the crura cerebri, a portion of the *inferior* surface of the brain, and also close to the medullary track in which we have found the motor nerves. The larger portion springs from the lower part of the crura cerebelli, winding from that which answers to the *superior* surface. Again; we find that the fifth pair, or a portion of it, after entering the cavernous sinus, swells out into, or passes through, a ganglion, and, examin-

ing more closely, we discover that it is the larger or superior part that forms the ganglion, while the inferior portion can be traced beyond the ganglion, until it afterwards unites with its fellow to form the perfect nerve.

The Double Function of the Fifth Pair.—These things had been pretty well known to some of the best anatomists; but it remained for Sir Charles Bell to draw from them the legitimate and important conclusion that this is a nerve of double function—of sensation and of voluntary motion. He laid bare the root of the fifth pair in an ass, immediately after the animal was killed, and on irritating the nerve, the muscles of the jaw acted, and the jaw was closed. He divided the root of the nerve in a living animal, and the jaw fell. There seemed to be no contradicting this. It had been admitted on all hands, that the fifth was a nerve of sensibility; it seemed now evident that it was also a nerve of motion. Sir Charles, however, pursued his experiment one step further; he selected the superior maxillary branch of the fifth pair, whose ramifications extend to the muzzle, and he divided it on both sides: the power of elevating and projecting the lip, as in gathering the food, was lost; and in order to open the lips, the animal pressed his mouth against the ground, and at length licked up the oats with his tongue.

Mr. Mayo's Experiments.—Mr. Mayo instituted experiments of a similar nature; and although he differed from Sir Charles Bell in some conclusions which he drew respecting the respiratory nerves, yet he arrived at a similar result as to the loss of power in the lips; for when he divided the second and third branches, the lips no longer remained in perfect apposition, and the animal ceased to use them in taking up his food. He, however, ingeniously accounts for this by the loss of sensibility in the part; and he tells us very truly, that when the sense of feeling is taken away from a part, the voluntary muscles cannot be efficiently excited.

Some Muscles are supplied by the Fifth Pair alone.—There are, however, some anatomical facts which incontestably prove that the fifth is a motor nerve; for there are certain muscles of great power, and particularly the masseter, the temporal, and the two pterigoids, which are principally or entirely supplied by the fifth pair, and therefore must derive from those nerves their power of motion as well as of feeling.

The probable Roots of Motor and Sensitive Power.—Then, as the inferior root arises from the inferior surface of the prolongation of the spinal chord, and (what we shall better understand when we have examined the spinal chord) it passes by, and does not help to form the ganglion, and its fibres are minute, it is pro-

bably the motor root; while the larger and ganglionic, and with coarser fibres, is devoted to sensation.

Peculiarities aud Course of the Fifth Pair.—I will not now minutely follow the course of the fifth pair,—I shall have to speak of this when describing the different parts of the face; but I must slightly glance at this portion of our subject. Here, in harmony with what we have already seen, we are first struck with the increased bulk of the trigeminus in all our patients, with regard to both roots of it, and more particularly the motor root. It has far more to do in the quadruped than in the human being. It has to give power of motion to the jaws, which are not only the agents of mastication, but, in many animals, the weapons of offence: it has to bestow additional sensibility on the lips, which in all of them to a certain degree, and in some of them to a remarkable extent, are to supply the place of hands, not only by executing every prehensile function, but being, as it were, the peculiar seat of the organ of touch. The fifth pair of nerves exert also a peculiar influence over the organs of sense, of which we shall have numerous instances, sometimes very interesting, and at other times not a little mysterious; and which influence will necessarily increase the acuteness of that sense, greater by far in the quadruped than in man, and therefore requiring greater development of the nerves.

Division of the Nerve.—After the ganglion has been formed by the greater root, and the ganglionless part has joined the other, and a perfect but evidently compound nerve has been the result, the trigeminus very curiously divides into three parts, within the cavernous sinus; and each, before it quits the cranium, assumes to itself a distinct investment of dura mater. These divisions or branches are called, from the parts to which they are destined, —the *ophthalmic*, the *anterior* (superior), and the *posterior* (inferior) *maxillary* nerves. I shall give an exceedingly short, perhaps unsatisfactory, sketch of them. If, amidst the multiplicity of subjects which these lectures embrace, any are neglected, they must be those of pure anatomy.

The Ophthalmic Nerve.—This is the smallest of the three. It is found within the sinus in conjunction with the superior maxillary, which it soon leaves, and passes through the foramen lacerum into the orbit; there it subdivides and forms three distinct branches,—*the supra-orbital* (the frontal), *the lachrymal*, and *the lateral nasal* (the nasal). The *supra-orbital* climbs behind the muscles of the eye, giving some filaments to the rectus superior and to the superior oblique, and some to the fatty matter of the eye; and the main branch, escaping through the superciliary foramen, is soon lost in ramifications on the elevator of

the superior eyelid, the integument of the forehead, and the periosteum. *The lachrymal,* as its name would import, is chiefly given to the lachrymal gland: some few ramifications are previously sent to the conjunctiva and the ciliary glands of the upper lid; while a distinct twig of it passes out at the angle between the zygoma and the frontal orbital process, and anastomoses with the supra-orbital, and with ramifications from the superior maxillary, and is also lost on the integument and muscles of the forehead.

The Ophthalmic Ganglion.—The third and the largest is the *lateral nasal.* Almost at its commencement we observe the filaments that help to form *the ophthalmic ganglion,* to which I alluded when speaking of the optic nerve. They are more numerous, and more easily traced, in some of our domesticated animals than in others; and the ganglion itself is differently developed, but for what physiological purpose I know not. It is comparatively larger in the ox than in the horse, and sends more nervous filaments to the iris. Four distinct ones may be traced in the ox, but seldom more than two in the horse or the dog. To these filaments, others of the ophthalmic that have not passed through the ganglion, afterwards join themselves, so that the ciliary nerves are also minute compound ones of motion and sensation; but more of this when we treat of the eye.

Course of the Ophthalmic.—After running between the rectus superior and the retractor, it gives a branch to the membrana nictitans, and then takes a singular course. Some ramifications go to the frontal sinuses and the foramina, and which, piercing the orbit of the eye for this purpose, are beautifully seen in young animals, and particularly in the sheep: the main branch then enters the cranium again through the internal orbital foramen, passes under the dura mater, and, in the manner that I have described in the fifth lecture, returns through the cribriform plate, and ramifies on the membrane of the nose, and sends some branches as low as the false nostril and the alæ of the nose.

The Anterior Maxillary Nerve, or second Division of the Trigeminus.—This contains so little that is peculiar to the quadruped, or of practical tendency, that I shall pass it very briefly over. The different situation and conformation of the bones of the face cause the principal or only variation in the distribution of this branch in the biped and the quadruped. It leaves the cranium through the foramen rotundum; and at the base of the skull gives off small ramifications to the inner canthus of the eye, the antrum and the two posterior molars; also to the cavity of the nose through the spheno-palatine foramen, supplying the lateral portion of the nasal cavity; while filaments are given

from the origin of this trunk to the temporal muscle, and a branch also runs along the upper border of the septum to the palate; and a larger branch, which traverses the palate in company with its bloodvessels, passes through the foramen incisivum to the upper lip.

The main trunk of the nerve now enters into the superior and exterior foramen in the hiatus, between the palatine bone and the tuberosity of the superior maxillary bone, and which leads into a bony canal easily to be traced in the horse between the maxillary sinus and the antrum, and appearing as a great pillar passing through the palatine sinuses in the ox;—it traverses this canal, and at length emerges on the face, through the foramen infra orbitarium, and under the levator labii superioris. It no sooner escapes from this canal than it forms the pes anserinus, the goose's foot;—it divides something like the foot of this bird. It anastomoses with, or receives numerous branches from, the seventh pair, and forms a strangely intricate plexus of nerves about the lower part of the face and muzzle, yet one wisely and beautifully contrived; for here, as being the peculiar seat of touch, are required all the flexibility and more than the sensibility of the human hand.

The Posterior Maxillary Nerve, or third Division of the Trigeminus.—This escapes from the cranium through the foramen lacerum basis cranii, and very soon gives off some important branches.

The first Branch of the Posterior Maxillary, reckoning posteriorly, proceeds backwards below the condyle of the jaw, where it divides into two portions: the first runs up to the parotid gland, ramifies into many filaments, and unites with the seventh pair; it also dips deep into and principally supplies the temporal muscle, and penetrates into and is distributed through the masseter muscle. In this division there would seem to be concentrated the greater part of the motor fibrils of the trigeminus, for these are muscles of extensive and powerful action; there are few muscles of the frame that are oftener or more powerfully employed than those which are concerned in mastication; but with the motor fibrils those of sensation are doubtless conjoined.

The Second Branch is a long and slender one. It first dips into the pterigoideus muscle, and which is supplied by it,—consequently it is here also a motor nerve as well as a sensitive one: it then passes round or behind the tuberosity of the upper jaw, supplies the buccinator muscle possibly with sensitive fibrils alone, for others go to this muscle from the seventh pair. In the buccinator muscle these fibrils are usually lost, but

sometimes a few of them may be traced down to the lower lip.

The third Branch, in the order of its being given off, is *the dental nerve*. This is generally considered as the continuation of the main trunk of the nerve. It passes across the pterigoideus, and enters a canal, *the dental canal*, on the inner face of the lower jaw-bone, near the upper edge, and at the bending or angle of the jaw. It takes its course along the interior of the bone, close to the roots of the teeth, and gives branches to each of them as it passes. Emerging through the lower maxillary foramen, it divides into two branches, one of which is spent in numerous ramifications on the outside of the lower lip, and the other in fewer ramifications on the inside of the lip. These are evidently sensitive fibrils, and the power of motion is derived from the seventh pair.

The fourth Branch in point of order, but which does not enter into the dental canal, is the *gustatory* or *lingual nerve*, and it is the largest of the four. It is singularly flat, like a little riband. It runs along the inside of the lower jaw, and a portion of it enters a foramen in the jaw to supply the roots of the incisor teeth with nervous influence; but the main nerve, proceeding obliquely downward, gives fibrils to the submaxillary glands, and to the glands and muscles at the base of the mouth generally. These fibres form true plexuses about the salivary glands and the muscles of the tongue; they anastomose freely with the twelfth pair (the *linguales* or motor nerve of the tongue), as this nerve had previously done with the seventh pair (the portio dura). The gustatory branch penetrates the substance of the tongue, between the stylo and genio-glossal muscles; it passes obliquely to the surface of the tongue, and terminates in the papillæ; and these papillæ, thus endowed with nervous influence, are the seat of the sense of taste.

The fifth a Compound Nerve.—It appears then that the fifth nerve has a *double origin and a double function;*—the larger portion, and *that which passes through a ganglion, is derived from the superior surface* of the supposed prolongation of the spinal chord; and the smaller, and *the ganglionless, springs from the inferior surface.* The portion *with the ganglion* is devoted to *sensation; that which afterwards joins it* is connected with *motion;* and thus the same sheath contains sensitive and motor fibrils, and *the nerve is devoted to the double purpose of sensation and voluntary motion.* The sensitive root, however, is so much larger than the other, and the sensitive fibrils so much more numerous, that it may still be called the sensitive nerve of the face; and upon mature examination we are assured that it is the only nerve of the brain

whose fibrils bestow sensibility on the face, except a few branches from the cervicals which may be traced to the lower part of it.

The Spinal Marrow.

Now then, gentlemen, we shall perhaps better understand our subject, if, for a little while, we leave the brain, and inquire into the construction of the nerves that supply the frame generally, and direct the voluntary motions of the muscles of the body, and bestow sensibility on every part; and these, as every tyro knows, can be traced on the trunk directly to the *spinal marrow*, and indirectly to it in the limbs, through the medium of the humeral and femoral plexuses.

Commencement of the Spinal Marrow.—I have already said, that I cannot point out the particular spot where the medulla oblongata terminates, and the spinal marrow commences; but I observe the medulla oblongata decreasing in width; the corpora olivaria in the human being subsiding into the general level, and in the subjects with which we have to do, the comparatively flattened and extended portions at the side of the medulla oblongata (answering to or comprising both the corpora olivaria and restiformia of the human being) also rapidly narrowing, and the diminution of width proceeding until I arrive at the spot, or nearly to it, where this prolongation of the brain quits the cranium and enters the spinal cavity:—this spot,—the mouth of the foramen magnum,—I consider to be the place where the medulla oblongata ends, and the medulla spinalis commences.

Form and Appearance of the Spinal Marrow.—When exposed to view, the spinal marrow has the appearance of a flattened cylinder, somewhat more convex inferiorly than superiorly. It is small compared with the canal through which it runs. The brain completely fills the cranium:—it does so in sickness and in health, for however emaciated the frame generally may become, the absorbents spare the brain; or if from local disease a part of it wastes, the vacuity is occupied by some fluid. It was necessary that concussion should be avoided in so important an organ; but there could be no joints in the cranium for they would have interfered with its requisite strength; and therefore concussion and injury were obviated by the cranium, being always full. The spine is composed of a series of joints;—the dorsal vertebræ admit of as much motion as is consistent with strength, and the cervical necessarily possess a greater degree of motion; and consequently if the canal was perfectly occupied by the marrow, the chord would be seriously compressed and injured by the various, and rapid, and extensive flexures of the vertebral column.

Comparative Size of the Marrow.—The spinal chord varies in bulk in our domesticated animals. It is comparatively larger in the quadruped than in the biped, and that with evident referenceto the different muscular power of each. It is more developed in the horse than in the ox or sheep. Notwithstanding the peculiar width of the medulla oblongata in the latter, the spinal marrow itself shrinks to a small chord. It is comparatively larger in the little horse than in the bulky dray-horse; and evidently more developed in the blood-horse than in him who has no pretention to foreign admixture. It seems to have intimate connexion with muscular strength and endurance. There is much in the bulk of the muscle, and more in its situation or the mechanical advantage with which it acts; but there is more yet in the degree of nervous influence which causes the muscle to contract. The conformation of the horse is a very important and sadly-neglected branch of study. I am sorry to say that there are many among us who have no definite or philosophical idea of the connexion between the proportion and the position of certain parts, and muscular action. Those of us, however, who know, or fancy they know the most about this, are often egregiously deceived; and the horse, beautifully proportioned, according to our notions, has neither spirit, strength, nor endurance. If we could look into the spinal canal, and especially if we could comprehend the mechanism of the brain, the mystery would be at once unfolded. To the development of the spinal chord in carnivorous animals we must chiefly trace their immense strength. Neither the bulk nor the position of the muscles of the jaws and neck of the tiger will satisfactorily account for the ease with which he will bear away, at full speed, an animal twice as heavy as himself. Mr. Neilson gives an account of a bear steadily carrying a dead horse over a small tree that had fallen across a river. The explanation is to be found in the excess of stimulus with which the muscles are supplied, and that connected with the bulk of the spinal chord, and the corresponding development of the nerves.

Size of the Spinal Chord in different Parts of the Canal.—The varying bulk of the chord in its passage through the spinal cavity will afford us some illustration of this. It nowhere fills the cavity; for the position of the vertebral column, and the form of the canal, are so continually changing, that the marrow would be exposed to compression and injury. In the upper part of the cervical division of the canal it is of considerable size, for it has to supply with nervous influence the numerous and powerful muscles that support and rotate the head. As it proceeds down the neck it evidently diminishes; but when it approaches

the lower cervical vertebræ it swells out again, for it has to furnish these plexuses of nerves which bestow sensibility and the power of voluntary motion on the fore extremities. After it has passed the first dorsal vertebra, and the muscles of the spine and the ribs alone are to be fed, it contracts again, and to less than its former dimensions: it loses, as it were, the lateral column whose function has been discharged, and it becomes diminished to a mere cylindrical chord; but, arriving at the lumbar vertebræ, where the femoral plexuses begin to be formed in order to call into action the muscles of that part of the frame in which the power of the horse seems peculiarly to reside, it once more thickens and widens, and attains a bulk to which it had not reached before:—and, finally, the lumbar vertebræ being traversed, it rapidly and strangely shrinks, until it becomes a mere point, for it has the tail alone to supply. Before the spinal marrow quite disappears, it divides into a great number of chords, some of which soon terminate, while others extend into the coccyx: this portion of the marrow is called the *cauda equina*, from its supposed resemblance to a horse's tail. In every part of the canal the bulk of the canal has reference to the size or the function of the neighbouring muscles; and so the animal principle preponderates in the inferior part of the creation, while the extent of intellectual power in the human being more than compensates for the deficiency of brute strength.

The Columns of the Spinal Chord.—It does not require any very minute inspection of the spinal marrow to observe that there is a mesian furrow running through its whole extent. It is more evident on the inferior than the superior surface, but sufficiently plain on both. It is a very convenient sulcus for the transmission and defence of the bloodvessels of the chord; but it is more than this—it constitutes a longitudinal division of the chord into two equal parts. Observe how readily, in this hardened brain, the chord separates in the direction of this furrow. You see the lacerated portions of minute medullary fibres running across, and, quite as plainly, an exceedingly fine cellular membrane. In fact, there are two nervous chords placed in apposition with each other through the whole extent of the spinal canal; connected with yet distinct from each other, and each discharging its proper function with regard to the side of the body on which it is placed. Some of the paralytic affections of the human frame are illustrations of this; hemiplegia, however, is a disease that rarely occurs in the quadruped. The medullary bands between the two columns are more evident than in the human being, and preserve, perhaps, a greater sympathy between the two divisions of the chord.

The Lateral Furrows.—Running parallel with the mesian furrow is another on each side, and on both surfaces. It is very distinct on the superior surface of the chord, and may be satisfactorily traced on the inferior one.

It is sometimes peculiarly interesting to observe the slow progress of the most important discoveries. Sir Charles Bell, to whom we are indebted for almost all we know of this portion of the nervous system, was long in detecting these subdivisions; indeed, in the early editions of his admirable system of anatomy, he speaks of a distinction, convenient for the purpose of illustration, but which has no structural existence. He says that "the two lateral portions are divided into an anterior (inferior) and posterior (superior) portion, so that this prolongation has *four* distinct portions." He has since discovered (and it is the key-stone to our knowledge of the structure and function of the spinal chord) that there are *six* distinct portions. Observe this transverse section of the spinal marrow. Can you not trace three distinct chords on each side—a central one superiorly and inferiorly, and a lateral one?

The Central Canal.—The perfect distinction or separation between the central columns, superiorly and inferiorly, is a most important thing. There is a cavity interposed between them—a central canal along the whole course of the spinal marrow. I must claim the discovery of this for a veterinary surgeon. Mr. Sewell, the assistant professor of the Veterinary College, so long ago as the year 1808, in a letter to the Royal Society, describes this canal running from the fourth ventricle through the whole length of the spinal marrow, containing a limpid colourless fluid, and lined by an arachnoid membrane. How near did this gentleman approach to one of the most interesting discoveries in physiology that was ever made! An error with regard to the *commencement* of the canal possibly prevented the discovery of the true structure of the spinal chord from becoming the proud boast of a veterinarian. I will not enter into the disputed question who was the actual discoverer of these six columns;—let the honour be awarded, if due, to M. Bellingeri, of Turin; but the conclusion, the all-important physiological and pathological deduction, from this structure of the spinal chord, I will claim for an English physiologist, the veterinary students' patron and friend. Respect and gratitude give me a double interest in his well-earned fame; although I now see him, with some others of his brethren, and to the exclusion of the only legitimate claimants—veterinary practitioners—sustaining the strangely anomalous character of *a medical examiner of veterinary pupils;* and for which, in truth, even *he* is, and can be, no more qualified

than I am to occupy a place at the board of Apothecaries' or Surgeons' Hall.

Sir Charles Bell's important Discovery of the Functions of the different Columns.—Now, gentlemen, examine once more these lateral furrows. Do you find some difficulty in tracing the inferior one? You will see on both surfaces at certain distances, and from one end to the other of the canal, little nervous fibrils coming out in a line, and then approximating and forming a nervous chord. On each surface they proceed from this furrow—from the superior surface plainly enough—and, after close observation, there can be no doubt that they spring from the same furrow on the inferior surface. It is evident, from the manner in which they spring from the chord, and from dissection of the hardened spinal marrow, that these fibres come from the central column above and below. Now, gentlemen, please to recollect what has been said of the cerebral nerves of pure sensation and pure motion, and the double root and double function of the fifth pair.

The Manner in which the Spinal Nerves arise.—Permit me to refer you to, and to recommend to your careful and I am sure profitable perusal, Sir Charles Bell's own account of this, in his admirable "Exposition of the Natural System of the Nerves." The short sketch which I am about to attempt will somewhat prepare you for that perusal, and will chiefly consist, although in other words, of the sum and substance of what he has stated. I observe, first, the nerves from the superior surface, and I have already seen that that superior surface answers to the portion of the brain which gives origin to nerves of sensation:—I trace these fibrils from the *centre* of this surface—I observe that they come out as it were *bodily* from the chord, that they approximate, unite, and *run into and form a ganglion.* I turn to the inferior surface, which more plainly answers to that part of the brain whence I traced the origin of the *motor* nerves;—I there observe these fibrils—they arise from the *centre*—they are *smaller* and more *superficially attached* to the chord—they also approximate—they unite—they form a nervous chord:—*they have no ganglion*, but they join the chord from the superior surface, immediately beyond its ganglion, and, as they are penetrating the dura mater, and emerging from that membrane, they coalesce and become one nerve. "Is it then," inquires the discoverer of the function of the spinal chord, "by means of these separate and essentially different origins, that the spinal nerve is enabled to discharge its apparently double office?" A less cautious physiologist would have jumped at once to a conclusion. He has recourse to the infallible test of experiment; and in the conducting

of the necessary experiments, the humanity of the inquirer reflects on him as much credit as his physiological acumen, and forms a highly honourable contrast with the recklessly brutal system of torture adopted by some other inquirers.

Bell's Experiments.—He opened the spinal canal of a rabbit, and cut the superior roots of the nerves of the hinder extremity. The creature crawled. The protracted cruelty of the dissection deterred him, he says, from ever repeating this experiment; and he reflected that it would be quite as satisfactory if performed on an animal recently knocked on the head and rendered insensible. He struck a rabbit behind the ear, and exposed the spinal marrow. On irritating the superior roots of the nerves he could perceive no motion on any part of the frame; but on irritating the inferior roots, at each touch of the forceps there was a corresponding motion of the muscles to which the nerve was distributed. This was perfectly satisfactory; and he now felt himself justified in coming to the conclusion, that "the anterior (inferior) roots of the spinal nerves bestowed the power of muscular motion, and the posterior (superior) roots sensibility."

The true Structure of the Spinal Nerves.—If you will now recollect what I have stated of the fibrous structure of the nerves, that not only each fasciculus, but each little fibril, was surrounded by its own neurilema, you will easily conceive the possibility of these nerves of different function pursuing their course independent of, and uninfluenced by, each other; or, in the words of my great master, if I may dare so to call him, and with which I will dismiss you—"each filament or track of nervous matter has its peculiar endowment, independently of the others which are bound up along with it, and continues to have the same endowment throughout its whole length."

CASE OF INFLAMED LAMINÆ—UNPROFESSIONAL CONDUCT.

By Mr. J. Buckten, *V.S., Middleham, Yorkshire.*

I have for some time purposed sending you a short account of a case which occurred last June. It was under my care, indeed, only a short time; but it was impressed on my memory by the ill treatment I received from the owner and a veterinary surgeon of established character; and I have not only a right to make it public, but it is in some sort a matter of duty, for such things ought not to exist among us.—A mare, seven years old, the property of Mr. Ridley, was taken from grass on the

11th of June last, and driven in a gig from Middleham in Yorkshire, to Appleby in Westmorland, about 42 miles, on a very rough road, and I believe in the course of one day. Previously to this the mare had been used for slow work, as carting, and she was very fat. She was started back again on the evening of the 12th, by the same route, and arrived at Middleham on the 13th, about 2 o'clock A. M.

On the 14th, about 9 o'clock A. M. she was brought to me. At first sight, and before I saw her move, I suspected inflammation of the lungs; but when she walked, and I had examined her feet, I had no doubt on my mind as to the seat of the disease. On inquiry of the owner, he said that he thought her not right on their arrival at Appleby, as she shifted her hind legs and appeared uneasy: nothing, however, was done until the 13th, when she was bled from the jugular by a farrier, and some hot tar poured into her feet. After that she was led out about a quarter of a mile into some wet grass.

Her pulse, when she was brought to me on the 14th, was upwards of 70. I took off her shoes, thinned the soles and crust, took five pounds of blood from each foot (all of them were affected), and applied cold poultices, ordering them to be kept wet with the coldest water. I also gave an injection, and a dose of aloes combined with fever medicine.

As I had previously made an appointment to go to Newcastle, I named this to the owner, and told him I would forego my engagement; but he would not listen to this, as he probably thought he could call in Mr. Fryer, who at that time was in attendance, nearly every day, at some of the training stables; and I was not over anxious to continue to attend the case, because on a prior occasion I had not been treated quite well by this gentleman. Accordingly I started for Newcastle at one o'clock in the morning of the 15th, and heard no more of the mare until my return on the 21st, when I was told that she had died the day before. Mr. Fryer had been called in, as I expected; and he stated to the owner, that the treatment I had used to the mare he (Mr. Fryer) would not have adopted. This gentleman has been in extensive practice upwards of 18 years, and therefore such a condemnation from him was not only annoying, but would probably be very injurious to me; and, indeed, this condemnation must have been couched in strong terms, for such was the impression which it made on the mind of the owner, that when we met he made use of very abusive language, and told me I had killed his mare; nay, he went so far as to strike me. I told him he had nothing more to do than to prove what he as-

serted, and then I should be liable to damages; but of this I have heard nothing.

Mr. Fryer has behaved very unhandsomely to me on former occasions, and particularly when called in to the same cases with me; not only hinting, but broadly asserting to the owners, that my treatment had been wrong, and without condescending to give me the least intimation of the matter. If I had been wrong, I should have been thankful to have been set right; but, without a word to me, it was highly unjustifiable conduct for him to malign me, and destroy my professional reputation with my employers.

I know your objection to personal controversy; but I think you will give a place in your excellent and impartial Journal to this statement of simple facts.

A CASE OF OBSTINATE CONSTIPATION, FROM OBSTRUCTION IN THE COLON.

By Mr. G. CLELAND, *Rosewell, N. B.*

THE following case was sent to us by Mr. Jackson, of Pennycuick, N. B. He complains that he is "much mortified by the ungenerous attacks made upon the profession of *ferrier* by veterinary practitioners, who have an interest in their downfall;" and he has transmitted this statement as a proof of what a "ferrier" can do: he also says "that the practical 'ferrier' will, in most cases, be found superior to those *white-fingered gentlemen* who have only got a theoretic knowledge of the profession in the class-room, without that practical experience which alone can make it valuable."

We acknowledge that the treatment of this case reflects much credit on Mr. Cleland, and therefore we insert it with great pleasure, and also because it is an unusual, and therefore a valuable case; but we must deny these "ungenerous attacks" to which Mr. Jackson alludes, on that useful class of men the "*ferriers*"—we are not conscious of them; and we demur also to the fairness of the comparison which Mr. Jackson draws between them and the *white-fingered gentlemen*. Previous "theoretic knowledge" will render the improvement from practice rapid and valuable, far beyond that to which the uneducated "*ferrier*" can ever attain. To this we add, that while the treatment of domesticated animals was confined to these "*ferriers*," it was degraded and despised;—it was the union of "theoretic knowledge" with practice which raised it to its present respectability;

and we "candidly confess" (to use Mr. J.'s own language to us), that we hope, or rather are assured, that the time is not far distant, when, as in the medical profession, no young man will be permitted to commence practice, until he has satisfied certain competent examiners that he possesses this "theoretic knowledge," united to sound practical principles. EDIT.

March 11*th*, 1830.—A YOUNG brown horse, the property of Mr. Boak, farmer, was sent to me at four o'clock in the afternoon, that had taken badly through the night, and had refused to feed. Early in the morning the corn was put in the manger before him, and left until the men returned about mid-day; they then found that his food was not touched, but that he had pawed and had tumbled very much, with profuse sweating. I bled him, as his pulse was about 46, and gave him 1 oz. opii tinct., 1 oz. sp. tereb., and 1 quart of linseed oil. I back-raked him, and gave him several clysters. He now settled himself, and dunged several times; and about seven o'clock seemed quite well. I saw him done up for the night, and that he had eaten a mash. I ordered his servant to stop till 12 at night, and then to go home. Mr. B. was from home at that time, but he returned before 10 that night, and ordered another servant to come for the horse, saying, that the doctors should always come to their patients. I was then sent for to my stables, and informed the servants of the danger of taking the horse out, as he had been very wet with sweat, and at that time it was very cold, and the wind was high. "It is your master's orders, you say; you may see that it is for his interest that the horse should not go back to night." I then left them, and about 15 minutes afterwards I was informed that the horse was away.

12*th*.—About five o'clock in the morning I was sent for, because the horse had been very bad all night. When I arrived I found the pulse 52. I bled him again, and gave a ball with four drs. of aloes, and I left them two doses of emet. tart. and digitalis. I also back-raked him, and found no dung, but a large mass in the colon, about the size of a stable-pail. I then ordered them to give him no straw, nor food of any kind, but that he should be clystered with a large quantity of warm water every hour; and that he should have plenty of water gruel.

I visited him in the afternoon, and found him in the same state. I then gave him 10 oz. of castor oil and 1 oz. of opii. tinct., as he had been very uneasy through the day. The clyster were continued as before, with salts added, and gruel was given in large quantities with the horn.

13*th*.—I was informed that he had been a little better all

night. The pulse was 46; the clysters were continued, and the gruel given as formerly. I visited him again in the afternoon, and gave him 7 oz. castor oil, half oz. tr. opii and before I left him I gave him another ball, containing 4 drs. of aloes.

14*th*.—Much the same as yesterday; continue the clysters and gruel.

15*th*.—I visited him again; and was informed that he had been very bad all night. I then gave him 6 oz. castor oil, 4 drs. aloes, and half oz. tr. opii; and he was clystered with oil. I then back-raked him, and pressed my hand firm down on the colon. The substance flattened, I thrust my fingers down upon it, and afterwards ordered the clysters and gruel to be continued.

16*th*.—I was informed that when the clyster came off it was tinged with yellow. I again back-raked him, and pressed down my fingers as before, and divided the dung considerably. I visited him at night; I back-raked and again divided the mass: clysters and the gruel continued.

17*th*.—I practised the same manipulation, and gave a ball containing 4 drs. of aloes; clysters and gruel were given in large quantities.

18*th*.—I visited him twice this day, and found the mass considerably softer; clysters and gruel as formerly.

19*th*.—I was informed that he had remained easy through the night, and in the forenoon he dunged often, after which he soon got well, and has continued so ever since.

THE EXTRACTION OF A CALCULUS FROM THE URETHRA OF AN OX.

By Mr. C. GEDDES, *V. S., Warthill, Aberdeenshire.*

May 15*th*, 1833.—Mr. William Horn, Cockmuir, called upon me to-day, requesting me to go and see a three-year-old working ox belonging to him, that had been observed in the morning to be unwell, and which he said he suspected to be ill of the "stony gravel." When I saw him he appeared to be in much pain: he was constantly getting up and lying down, and occasionally kicking his belly with his hind feet, and making efforts to void his urine. On tracing the urethra with my hand, I detected a small stone about eight inches from its point, and I proposed to the owner to have it extracted, which he agreed to. Having got the animal thrown and properly secured, I commenced the operation by drawing the skin a little on one side; and having made an incision through it into the urethra, a cal-

culus about the size of a bean presented itself, which was easily extracted. I secured the incision with a stitch, and allowed the animal to get up, when he appeared to be completely relieved, and in the course of ten minutes he voided his urine as if nothing had taken place. Three days afterwards I called to see him, when he appeared to be perfectly well, the wound having adhered by the first intention; and in fourteen days the owner sold him.

AN UNSUCCESSFUL CASE OF DIVISION OF THE FLEXOR TENDONS.

By Mr. J. Holford, *V.S., Middlewich.*

There being many cases related in your Journal of a division of the flexor tendons, and some of them inserted before time could shew whether the result was a perfect cure, or at least the bringing of the animal to a state of permanent usefulness, I beg leave to transmit to you the following account:—The subject is a fine valuable horse, aged 9 years, which, until his seventh year, had travelled as a stallion in Staffordshire. At this period he received a kick in the off-hind leg, and for which he had been attended by a respectable practitioner. He had been blistered repeatedly, and once fired, but with no good effect. The owner then sold him to a Mr. G. Moore, captain of a fly boat on the line of canal between Birmingham and Liverpool. His weekly work was to go from this place to Manchester and back, a distance of 44 miles each way, having three days only in which to perform this labour—the remainder of the week he rested, as is usual with these horses.

For seven or eight months the owner worked him, but perceived him gradually to go worse and worse, so that at last he walked upon the point of his toe.

Mr. Moore had been told by a Mr. G., in Manchester, that the heel might be brought down to the ground, and his horse cured. It was for this I was consulted; and, by his desire, I operated on the 8th of last May, midway between the hock and fetlock joint, and treated the wound as described by your contributors.

In six weeks the patient was able to be turned out to grass, without much perceptible lameness. In three months his pasture was changed, and he went with two other horses. He at this period shewed no lameness, and placed his heel down apparently with as much facility as the other, and the leg appeared as strong as the near one.

He had another month's rest before he was tried to work again, and was then put to the line which connects the horse with the boat; but before he had gone six or eight miles, he was observed to favour the leg, and walk lame.

The owner then sent him home, greatly disappointed, and six weeks' more rest were given him. In a day or two the lameness left him, and he was observed galloping about the field, as he had daily done before he was tried to work.

The owner being tired of the expense of keeping, determined upon working him; but he gave him only two days' work in the week, a distance of 25 miles on the Wednesday and 25 on the Saturday.

For two months he was kept at work; but at every lock he was seen constantly lifting up his leg and throwing all the weight he possibly could off the flexor tendons; and at the end of this period he again walked upon his toe, but not so much as before. Different kinds of shoes were tried to prevent this, but with no beneficial effect. He was always worse at the beginning of his work, and when he had been standing, than he was when he was travelling. He is now turned out for a winter's run, with a lever shoe on. At the present time he is not worth ten pounds, whereas, had he done well, three times that amount would not have bought him.

Now, Messrs. Editors, it is from a love of the profession of which I am proud to be a member, and a consciousness that its interests cannot be promoted by the encouragement of delusive hopes from any operation or mode of treatment, that I send you this case; and I shall be happy to hear, through the medium of your Journal, how the above-mentioned cases turned out. In that which was related by our lamented and estimable brother practitioner, Mr. Castley, as performed by Mr. Dick, the horse was, six months afterwards, as bad as the one here stated. This I learned from a friend, who is a native of Edinburgh, and at that time a pupil of Mr. Dick.

ON CATARACT.

By Mr. W. Perry, *V. S., Swaffham, Norfolk.*

Although I have been in the habit of reading your Journal from its commencement, I never felt an inclination to lay my opinions before the public; but being much pleased with the remarks of Mr. Cartwright, in your last Number, I feel called on to

put you in possession of a few practical observations which have occurred to me.

To the point, then, as regards cataract, and the opinions of persons quoted by Mr. Cartwright, and in some measure considered to be confirmed by Mr. Coleman and Nimrod, viz.—that cataract only occurs when preceded by inflammation. To this I beg to give a positive dissent: not that I would be understood, by meeting the subject thus abruptly, to convey an idea that cataract, or that opacity of the lens which we so often meet with, is not generally the effect of repeated and long-continued attacks of inflammation; but that I have met with many cases where there has been one or more inconsiderable opaque spots on the lens that have not been preceded by inflammation, and that I have never been able to satisfy myself that their presence has in any way impaired the vision.

Some time since I called on a friend, who was anxious to shew me his mare, not professionally, but because he had formed an exceedingly high opinion of her. When she was led to the door of the stable, I discovered that she had two cataracts. I mentioned the circumstance to him, but he could scarcely credit it; and he assured me that the animal was bred by himself, that she had never been ill in any respect, and that her eyes had ever been bright and free from disease.

Mr. Coleman, giving his opinion on the subject, founded on his practice, as all men should do (and from which, in this instance, I dare say that he never saw an exception), is not to be blamed; for when we consider the peculiar situation in which he is placed, we shall not be surprised that he should be in the dark on this point. When a horse is taken to the Veterinary College with diseased eyes, that disease is generally as apparent as the sun at noon day. Every helper in the stables sees immediately that the horse has inflamed eyes; and, had not that been visible to the master or the groom, the horse would never have been sent there. This inflammation terminates in cataract; so do many more that follow, under the cognizance of Mr. Coleman, and therefore he forms the opinion as above quoted.

Again, horses are brought to Mr. C. to be examined as to their soundness: he detects a cataract—that is sufficient: what has he to do with the question, how it came there? What inducement would he have to inquire whether or not it had been preceded by inflammation, when probably the very person in whose possession the horse then was, had been ignorant of the fact until then. Thus has Mr. C.'s opinion been supported from year to year by practical observation (for want of greater scope), and become in his mind a matter no longer of doubt, but decided.

It is not to the Professor of the Veterinary College, nor to any one connected with that establishment, that we are to look for the minutiæ of diseases that rarely occur, but to men who have the chance of investigating daily, in country practice, the different causes and effects of diseases that may be protracted through many years.

Much do I admire Nimrod, as far as he has gone (and he appears never to have arrogated to himself much knowledge of veterinary science); but I am surprised (and I feel assured so must Nimrod) that any veterinary surgeon, in a knotty point, like the one in question, should refer to him. Nimrod has done much to amuse, and much to instruct sportsmen generally in the management of horses, for which he deserves our warmest praise.

I have generally observed that cataracts, when formed of these small distinct bodies on the lens, although they have assumed a dense appearance, have been productive of no mischief. It is when they form in the centre of the lens, assuming the appearance of rings, slightly clouding the transparency of the lens, and not dense as the former, that they are to be dreaded; and this latter appearance I believe to be always the effect of inflammation.

A friend of mine, a surgeon in this town, purchased a bay pony with a cataract in each eye: he was ignorant of the fact until he shewed the animal to me. They were in appearance extremely dense, formed in the centre of the lens, about the size of a small white pea; and although the lens was transparent on each side, I conceived the vision of the pony must have been imperfect: but his owner continued to ride and drive him many years, and he has frequently assured me that he was the safest animal he ever possessed, and that he never discovered any defect of vision.

Whilst on this subject, as Mr. Cartwright has not noticed it, nor any one else that I know of, I must make an observation on the termination of cataract; for though inflammation frequently produces cataract, yet this does not, in all cases, appear to be the termination of the disease,—it is only the loss of vision. A diseased action is frequently carried on after the lens has become thoroughly opaque; for after this opacity is completed, it appears as if the lens acted as a foreign body; absorption takes place, and the lens not only loses its adhesion to the iris, but falls into the anterior chamber of the eye. This I have often observed; but I believe it never occurs until after the aqueous tumour has been absorbed.

I have never met with a case where the cataract, however incipient, has been absorbed.

In July 1832, a gentleman called on me, and informed me that he had a foal three days old, and that it appeared to have

no eyes on the day following the birth. I went to see it, and to my surprise I found in the orbit, on the near side, an excrescence of fungus about the size of a common pistol ball, without any organic structure. In the other orbit it was somewhat larger, answering in appearance to the former, with the addition of the membrana nictitans.

CASE OF FRACTURE OF THE RIGHT METACARPAL BONES.

By Mr. D. Moulden, *V. S., London.*

On July 24, 1826, I was sent for by Mr. W. Pain, of Micheldever, seven miles from Winchester, where I then resided, to see an entire cart horse, of great promise, rising four years old, that had, it was supposed, broken his leg in going out of the stable to water; his foot having slipped underneath the sill of the door, which was considerably above the ground, the same having mouldered away and formed an inverted arch. On my arrival, I found the poor animal in a most deplorable condition, standing upon three legs, and the broken one bent inwards; the fracture was transverse, and four inches below the knee. I must confess I was very doubtful as to the result. But "*Nil desperandum.*"

With the assistance of the owner and his servants, we placed the horse between the shafts of a waggon, and suspended him by means of a cart line to the timbers that went across above, with a couple of sacks moderately filled with wool under the abdomen, and a breeching for him occasionally to recline upon, and which very materially assisted him. Having placed the fractured ends in apposition, I wrapped round them several sheets of brown paper, well soaped, and upon that some fine tow. I then bound these round moderately tight with an elastic bandage, and over this were four splints, so secured that they could not shift from the position in which they had been placed.

Being a large animal, and very wide in his chest, I had a kind of pit dug, filled with soft hay, for the foot to drop into. In the course of a month he would frequently rest upon it with as much indifference as the other leg, for ten minutes at a time. He was kept in this position until the 20th of September, when all his trappings were removed, and to my great satisfaction, he walked across the stable with a slight degree of limping, but not at all distressed. He was kept in a loose place for two months more, and then sent to plough; worked upon the farm for two years, and then sold for 65*l.* as a stock horse, to a man named Bently, a person noted in that part of the country for horses for that purpose.

A CASE OF TETANUS FOLLOWING FRACTURE OF THE CRANIUM.

By Mr. G. Skeavington, *Devonport, late V.S. Bengal Horse Artillery.*

"I'll tell your honour," replied the corporal, "every thing straight forwards as I learnt it."—Sterne.

It was my duty to visit our hospital morning and evening; but not having any patient in it that required my immediate attendance, I did not go to it on the evening of April 26, 1830, being invited to dine with my friend, Major W., of the Artillery, and at whose house I remained until 10 o'clock P. M. (we always dine at sun-set in India). On getting into my buggy, my groom informed me that one of the troop-farriers had been to my house, about eight o'clock, inquiring for me, but did not leave any message, not willing, I suppose, to disturb me. Having received this information, I proceeded to the hospital stables without further delay, where I found a dun horse, about six years old, having had his head cut by running violently against a cross bar which is in the cavalry stables at the head, about six feet high, for the purpose of tying the horse to during cleaning, &c., there being no manger or wall at all at the horse's head, and consequently they are fed with corn from a leathern nose bag, and eat their grass off the ground. I found, on inquiry, the horse had broken loose from his groom during watering time, and had been galloping about for several minutes, when, after repeated efforts to catch him, he dashed into his own standing with such force as to occasion the fracture. The cut was from just under the forelock, about two and a half inches down the face. The farrier on duty had sewn it up, and on examination I could not find any thing that would not warrant the conclusion it was a common wound of the skin, and would be well in a few days.

27*th*.—On visiting the horse this morning, I found his head extremely hot, and his mouth also hot and dry; the pulse 50, and full. I ordered him to be bled 8 ℔, and gave aloes ʒiiij, tereb. vul. ʒiij. Bathe the head well with warm water three times a-day.

28*th*.—Medicine operating well but not violently; the head still hot; continue the bath; the pulse the same as yesterday; the wound looks dead on the edges; apply after the bath digestive ointment to the wound.

29*th*.—The wound discharges well, pulse 40; discontinue the bath, and apply digestive ointment to the wound as before.

30*th*.—Discharge continues to go on well, the sutures being

but slightly applied are all broken out; the wound is open, but looks healthy; granulations of a healthy nature appear at the bottom of the wound, the formation of which, I take it, forced the sutures from their hold; continue the digestive ointment to the wound, and put three straps of adhesive plaster, half an inch broad and four inches long, across the forehead, over the wound.

May 1*st*.—Wound looking well; continue the ointment and strapping. This treatment was continued until the 4th of May, when I left off the dressing, the wound being quite filled up. Apply tinct. myrrh morning and evening. The tincture was applied until the 13th, before a complete cicatrix was formed, but left a scar about the size and shape of an almond. I kept the horse in the hospital until the 17th, for it was my custom, before discharging them for duty, to retain them three or four days after treatment.

17*th*.—On visiting the horse this morning, and having him walked before me several times, he appeared to move rather stiff; and on examination I observed the jaw protrude more than usual; on examining further, I considered the muscles of the neck stiff and rigid, yet not decidedly so. These symptoms led me to suspect that tetanus was a near neighbour. I immediately ordered the horse to be bled 10 pounds, and gave aloes ʒvj, tereb. vul. ʒiij.

18*th*.—This morning I had the horse removed to a loose box: he cannot separate his jaws more than an inch asunder; he attempts to eat but cannot. I again particularly examined the head, and fancied that on the situation of the wound it was softer; but to so trifling a degree that it was mere conjecture in my own mind, knowing that newly formed skin could not be so solid and firm as the old; however, I was determined to ascertain the fact if possible, suspecting that the injury to the bone had been greater than the first symptoms had developed. I had the horse cast, and making two oblique incisions downwards, about two inches apart, beginning just under the forelock, I brought them to a point three inches down the face. I then detached the skin, going as close as possible to the bone upwards from the apex; having laid the skin back, it was held in that position by one of the farriers, while I proceeded to examine the bone, which I found fractured, about an inch in length, just in the centre, on the parietal suture. I removed a piece of bone about three parts of an inch long, and, what astonished me, the edges of the divided bone appeared to rise up, not depress. This rather puzzled me at first, and, indeed, it does now; because by the rising of the bone no pressure could be on the brain, unless some extravasation had taken place; but as I did not peep into the cranium, I could not ascertain this.

My friend, Dr. Storm, of the Artillery, was present, and had the trephine been required, he had kindly brought his case with him; however, I did not think so after removing the portion of splintered bone. I sewed up the wound, and ordered it to be dressed with digestive ointment, and prescribed aloes ʒiiij, terebin. vul. ʒiij, in solution. This we had great difficulty in accomplishing; but, however, having some stock of patience, we completed it in about an hour.

19*th*.—Medicine not yet operating; the horse altogether worse; muscles more rigid, and on moving he evinces great pain; the tail is stuck out in an horizontal direction, ears quite stiff and set, pulse 55; give aloes in solution ʒiv; put a rowel between his jaws, and dress head and rowel with digestive ointment. Ordered one of the farriers to remain with the horse until the medicine operated.

20*th*.—Medicine began to operate about twelve o'clock last night; horse appears greatly relieved, rowel and the wound discharging. Repeat dressing.

21*st*.—Jaws a little relaxed, but not sufficient to introduce a ball: medicine operating well; continue dressing to head and rowel.

22*d*.—Horse better, eats a little grass and corn, but appears to have great difficulty in swallowing: physic setting.

23*d*.—Horse better; still the mouth is so much closed that the hand cannot be introduced; give a ball with the probang. ℞ Antimony, sulphur, nitre, and camphor, two drachms of each, morning and night.

24*th*.—Horse appears better and more lively, but still the mouth is partially closed, the muscles of the neck rigid: in fact, he is altogether stiff: apply liquid blister about a foot down the neck, beginning at the ears; medicine as before.

25*th*.—This morning the horse is astonishingly better; he eats better, can move his jaws pretty freely, but the jaw still protrudes on the movement of the hand before his eye, and when he is driven round his box; the tail and muscles remain much in the same state as before. Repeat the ball and add aloes ʒij; apply digestive ointment to blister; the wound on the head is healing, the rowel discharges but little; remove it.

26*th*.—Much the same as yesterday.

27*th*.—The horse is better, but his bowels are rather constipated; discontinue the former medicine, and give aloes ʒv, tereb. vul. ʒiij.

28*th*.—Medicine operating; dress head and poll with digestive ointment as before.

29*th*.—This morning the farrier on duty told me the horse all

of a sudden (to use his own words) opened his mouth wider than he had ever seen a horse in his life: still considerable stiffness appears about his whole frame.

30*th*.—Medicine set; horse appears so much better, that I discontinued any medical treatment, gave him his full allowance of corn, and exercised him twice a-day: this continued until the 6th of June, when I discharged the horse cured.

CASES OF THE CURE OF GLANDERS BY FUMIGATION WITH CARBONIC ACID GAS.

By Mr. STORRY, *V.S., Pickering.*

WHEN I sent the cure of glanders in Mr. Smith's mare, I did intend soon afterwards to have transmitted for insertion in THE VETERINARIAN some other cures of the same disease by the process of fumigation, &c.; but I have not found a convenient opportunity since. In THE VETERINARIAN for January is a communication from Mr. W. C. Spooner, in which he makes some pertinent and judicious remarks on glanders generally, and on the particular case furnished by me for your number for April in the last year. For his satisfaction I beg to state that the farcy leg was cured by using a solution of corrosive sublimate externally, and repeating the ball (mentioned in the treatment of the case) once a week for three weeks. Mr. Spooner asks, "has Mr. Storry never met with any cases during this long period on which he could put in practice his fumigating plan? and, if so, have they been attended with success?" To both these questions I answer—yes, and proceed to narrate the following cases:

On the 25th of February 1832, I attended a mare, seven years old, belonging to Mr. Wm. Grayson, jun. of this place. I found the submaxillary gland on the left side enlarged to the size of a walnut, and adhering to the jaw. The discharge was from the nostril on the left side only, and which was greenish, very tough, viscid, and fetid, with mucous spots appearing very strong upon the septum; she was also in such a state of mange, or scab, as we seldom witness. She had been attended for a considerable time by "a son of Vulcan." I gave purges of aloes and calomel, inserted a rowel near the tumefaction of the submaxillary, and fumigated once a-day, for a week, with the carbonic acid gas, and the disorder appeared to get worse. The discharge was changed to yellow, and streaked with blood, and more fetid and offensive than ever; so much so, that the groom begged that I would give up the attempt to cure her, and let her be "put

off;" but I persisted in the plan of fumigation, and had recourse to other means which I considered requisite as the case went on, both for the scab and glanders, for about six weeks, and they both gradually gave way to the power of the medicine used, and finally a perfect cure was effected. The mare soon exceeded her former strength and condition by being turned out to grass about two months, and was sold to a horsedealer in this town for £30, being more than she was ever worth before.

I have also cured three other cases of glanders, which I think it not necessary to enter into a full detail of, further than to state the owners' names and residence, viz., Mr. Robt. Heddon, Mr. Thos. Heddon, and Mr. Matthew Monkman, all residing at Pickering, and all of which, I scruple not to say, have been perfectly cured by fumigation and proper treatment in other respects. I must, however, press upon the attention of the practitioner, in these malignant cases, that *strict* attention is necessary with regard to the progress and operation of the means used and their effects on the disease; and that the medicine should be proportioned according to the circumstances of the case. It is out of my province to enter into any learned and elaborate discussion of the various opinions that have been propagated respecting this disease; I have only read them with a view to ulterior usefulness, and to enable myself thereby to prescribe, if possible, a remedy, and further to impart a knowledge of the result of my experiments to the profession generally, of which I am proud to be called one of its humblest members.

A CASE OF DETERMINATION OF BLOOD TO THE HEAD.

By Mr. Tait, *V. S., Portsoy, N. B.*

August 18*th*, 1833.—This day I was sent for by Hans G. Leslie, Esq., of Denlugas, to see a very fine calf, which had been observed to be unwell on the day before, as he did not follow the others, and lay down more than usual. After he was taken home, and previous to my seeing him, he was bled to the amount of nearly two quarts, and had some laxative medicine given to him, which had operated, but seemed not to have produced any beneficial effect, and the overseer remarked that he was much worse, and appeared to be dying.

When I arrived, he was lying with his head doubled to his elbow, grinding his teeth, and frothy saliva flowing from his mouth; the extremities cold, the pulse about 80, and the respi-

ration quicker than usual. Being unable to rise, he was lifted up, when he thrust his head against the manger, and appeared to be quite unconscious of surrounding objects. So strong was his desire to go forward, that it was with great difficulty he was kept back, until I bled him to the amount of three quarts, when he became somewhat faint. I then ordered him to get 12 oz. of magnes. sulph., and left some powders composed of emetic tartar and nitre, to be given night and morning, and gruel to be administered frequently and freely, as he had not eaten any thing since he was attacked. I did not see my patient again, but met with Mr. Leslie some days afterwards, who told me he began to improve gradually after I left him, and was then perfectly well.

A CASE OF HEPATIRRHŒA IN THE COW.

By the same.

Sept. 12*th*, 1833.—I was requested by Mrs. Wilson, of Roseacre Cottage, near Portsoy, to see a quey, two years old, which had been observed to be unwell on the night previous; but the herdsman thinking there was nothing serious the matter with her, did not require my attendance sooner. I being from home, my assistant went and found her standing; pulse about 80, and nearly imperceptible at the jaw, with extremities cold, rumination suspended, and a considerable degree of tremor in her hind quarters. He immediately tried to bleed her, but ere he got the blood to flow, she fell and expired. The mystery of her sudden death was divulged by a *post-mortem* examination. On opening the abdomen, that cavity was nearly filled with blood, amounting to about six gallons, which had escaped in consequence of a rupture, two inches in length, in one of the lobes of the liver.

CASE OF STRANGULATED ABDOMINAL HERNIA.

By Mr. Thomson, *V. S., Beith, N. B.*

On the 24th of July, 1833, I was requested to attend a colt, the property of Mr. Thomas Kerr, Dulry. There was a large fluctuating tumour upon his flank, and he was rolling now and then as in colic. I examined the tumour, and distinctly felt a portion of small intestine in its cavity: it was hard, and apparently strangulated.

The colt was thrown upon its back, and the hernia, with considerable difficulty, reduced. The tumour did not altogether

subside, but this was supposed to be in consequence of effusion of blood from the wound in the parietes of the abdomen. A roller was applied, and the colt seemed relieved.

Three days afterwards I was again desired to attend, as the swelling had grown to an enormous size: it now filled the whole flank, and extended considerably along the belly, but was quite soft and fluctuating, and no intestine was to be felt. I was afraid it might be a protrusion of a portion of the cæcum, or an effusion of blood from some ruptured artery.

The colt was again thrown upon his back; but at this time the hernia could not be reduced, and an operation was therefore necessary. I made an incision through the skin in order to examine the nature of the case, when a large quantity of water made its escape from the cavity of the tumour and belly, which made the assistants exclaim that "I had cut into its *puddings*." I was even myself afraid; but, on further examination, it was found that the water had proceeded from the cavity of the abdomen, in which an effusion of full ten quarts of water had taken place. A portion of omentum likewise protruded from the wound, and which was highly inflamed, and vascular. This was immediately and carefully returned, and the wound closed by three stitches. Portions of the abdominal muscles, which had been torn, apparently by some blunt-pointed instrument, as the horn of an ox, yet which had not broken the skin, were brought together and united in the same way. A roller was now applied, and orders given to remove it daily, and cleanse and bathe the wound with warm water. A fluid continued to escape for several days after, but the wound gradually healed, and in a few weeks the animal was again sent to grass.

Six weeks afterwards I was again sent for, in consequence of a swelling having appeared upon the same place. On examination I found it to have been an abscess, which had burst upon the upper part of the tumour and within the flank, leaving a small fistulous opening into the belly, and from it a discharge of matter issued, having the smell of the intestinal excretion. I made an opening in the under part of the tumour, and passed a seton needle armed with tape deep among the muscles, directing its point to the higher opening, and thus forming a communication with the two, and securing a good dependent issue. The fistula was syringed out daily with a solution of sulphate of zinc. The tumour gradually disappeared, and the part is again whole.

ON GELDING OF PIGS, AND THE HEALING POWER IN THE PIG.

By the same.

The plaguy rigs are never worth their meat—
They neither feed, nor are they fit to eat;
The Vet. who cannot cure this with his knives,
Need ne'er court favour with our Ayrshire wives.

ALTHOUGH there is usually no more difficulty in opening the side of a pig, and extracting the testicle from the cavity of the belly, than in the common operation of spaying, it may not, now and then, be quite easy to get at the testis on the opposite side, especially if its cord is very short. When this occurs, I introduce the tenaculum, and hook it out to the external surface.

In July 1832 I was requested by Mr. Barr, farmer, of Giffin Castle, to castrate a pig. Having laid the animal on a table, and while I was in the act of cutting through the peritoneum, one of the assistants lost his hold. The pig sprung up, and the scalpel was plunged deep into the belly. I proceeded to extract the testicles, but saw that some of the intestines were wounded, as fæces were escaping from the opening in the side. The greater part of the small intestines had to be drawn out by the opening before the injury could be discovered. The knife had entered deep among the convolutions of the ileum, and divided one of the guts almost through, and it had also made a considerable wound in the mesentery.

A fine needle and thread were immediately procured, the gut and mesentery were nicely adjusted and sewed together, and returned into the belly; the side was secured by stitches, and the pig was liberated. I had not much hope of success in this case; but the healing power in the swine appears to be strong, for in two days afterwards little appeared to be the matter, and the animal soon completely recovered.

CASE OF AN ADVENTITIOUS MEMBRANE IN THE VAGINAL PASSAGE OF A FILLY.

By the same.

IN the month of November 1832 I was called to a young mare the property of Mr. Hine, farmer, of Kilkarnie, which he said had inverted her bladder. On my arrival I saw, protruding from the

vulva, a membranous sac containing about a quart of fluid in its cavity. On examining it I found it to be only a simple membrane, but extremely vascular, and much inflamed. It was easily pushed back into the vaginal cavity, where I found it attached to the posterior part of the urethra, and all around the vaginal canal, so as to completely obstruct all passage into the womb, nor could I push the membrane so far back as to feel the os uteri. On removing my hand it again protruded whenever the mare used any forcing effort. I proposed to puncture it, but the proprietor rather wished some other means to be tried. I directed it to be frequently bathed with an astringent wash, when in two days it again receded within the passage, and has not since made its appearance.

Having some suspicion that it was a hymen, I examined several young mares since, but could not find any traces of it until a few weeks ago, when a filly, belonging to Mr. Young, farmer, of Jonstone, died in consequence of an affection of the kidneys. Here the membrane was found, but there was a perforation through it immediately behind the urethra. The fillies were about a year and a half old.

A CASE OF CHRONIC ABSCESS ENCYSTED IN THE CAVITY OF THE ABDOMEN, WHICH WEIGHED 23 POUNDS AVOIRDUPOIS.

By Mr. W. F. KARKEEK, *V.S., Truro.*

A CHESNUT mare, two-thirds bred, seven years old, the property of Mr. Dingle, a farmer residing about eight miles from Truro, was brought to my infirmary in June last. She had occasionally experienced slight spasmodic attacks in the bowels, which were speedily relieved by antispasmodic medicines; but in other respects she enjoyed uninterrupted good health.

The animal was an excellent hack, and was oftentimes rode long and fatiguing journeys, which she accomplished with ease to herself, and pleasure to her rider.

About a month previous to her entering my stable, she shewed, for the first time, symptoms of illness: her coat, which before was fine and glossy, now felt harsh and dry, and appeared to have lost its usual elasticity. Alterative medicines and green food were recommended instead of hay, with bran and corn as usual. This produced considerable benefit for a fortnight, but it was only temporary relief that was afforded. The spasmodic attacks becoming more frequent, and the mare gradually get-

ting weaker, she was removed to my stables, that she might be under my immediate inspection.

Her pulse varied from 36 to 48, according as she experienced pain in the abdomen. As she became weaker, these pains became stronger, and of longer continuance. I found no difficulty in relieving the spasms for the time, but they occurred regularly twice a-day. Gentle exercise had been usually given, but this was obliged to be discontinued—the least exertion occasioning excessive perspiration and fatigue. She had now been in my infirmary about a week, and had gradually become worse; her mouth became covered with a viscid mucus, and for the first time evinced pain on pressure being applied to the abdomen. Her pulse, when free from pain, seldom exceeded 38, and even when suffering extreme pain it was not more than 50. She died, after being under my care, in about ten days. A singular circumstance occurred about an hour before her death; she vomited up the whole of the contents of her stomach, and with as little difficulty as a human being vomits after taking an emetic.

Sectio Cadaveris.—On laying open the abdomen, and exposing the viscera, I discovered a membranaceous sac, of considerable size, strength, and firmness, composed of several lamellæ, very closely compacted, adhering to and surrounded by the small intestines. This cyst, after being dissected from the intestines, weighed 23 pounds. On cutting it open, from 9 to 10 pints of muco-purulent matter escaped, of a yellowish grey colour.

The internal lining of the cyst was evidently a mucous membrane; and from the history of the disease, I have not a doubt that it must have existed from the period when the animal first became affected with those griping or colicky pains that I have described—nearly two years.

When they first made their appearance, a dose of antispasmodic medicine, composed chiefly of the tincture of opium and spirit of turpentine, afforded almost instant relief. This was generally sufficient for the first seven or eight months, but afterwards it was found necessary to add a slight dose of cathartic medicine, and occasionally a little blood was taken from the animal. By these means the mare became free from pain for six or eight weeks. The internal lining of the cyst being a secreting membrane, when the secretion went on more briskly than the absorption, the abscess increased in size; and when the absorption was more active, it diminished.

It was evidently the pressure of this immense abscess on the small intestines that occasioned the spasms. When the secretion and absorption were equal, the abscess remained stationary,

and the animal was free from pain; and in proportion as it increased in size, the spasms became more frequent and violent.

A portion of the duodenum to which it was attached was considerably thickened, but not contracted in its circumference. There was not the least appearance of inflammation.

Glasgow, Feb. 4, 1834.

[*From Mr.* STEWART, *disavowing the Advertisement of his Work.*]

Gentlemen,

You have called upon me to disown the authorship of a scandalous advertisement, having reference to my *Advice to Purchasers of Horses;* and although I cannot admire the peremptory manner in which you make the demand, I will nevertheless respond to it, so far as to state, that I had no hand whatever in concocting the article in question; that I never saw it till printed; and that I then unhesitatingly condemned it as unfit for the public eye; a tissue of falsehoods, and at variance with the contents of the book it referred to. Since that time such an advertisement has not, to my knowledge, been seen.

While I address the Editors of THE VETERINARIAN for the purpose of making the avowal they demand, I think I have a right, at the same time, to inquire who was so kind as to induce them to believe that I was the author of the offending puff? That they have taken upon themselves to attribute such a thing to me, merely because it was associated with my work, I will not believe: and I do not think I am more unreasonable in requiring their authority for doing so, than they in calling an author to account for the ignorance or impudence of his reviewers and publishers.

I am, gentlemen, your obedient servant,

J. STEWART.

The advertisement of a work is always, and justly, considered to be the composition of the author, or, at least, approved by him. He must be a strange kind of publisher (we hardly know by what name to designate him) who would put forth one which he well knew would be revolting to the author's feelings, and which might for ever compromise his literary character; therefore Mr. Stewart's demand of the name of the informant, supposing that there had been one, is really absurd. We rejoice in Mr. Stewart's disavowal of so disgraceful a puff, and were confident that he would disavow it.—EDIT.

ON THE STRUCTURE AND USES OF THE INFUNDIBULUM AND CANALIS VASIFERUS IN THE HORSE'S FOOT.

By Mr. Charles Clark, *V.S., London.*

This remarkable duct or reservoir in the horse's foot has passed unobserved until very lately, for its position is such that it could not be seen in an injected preparation; and there is but one mode of dissecting the part by which it is presented fairly to view, and by proceeding in any other way its delicate organization will inevitably be destroyed.

It is situated immediately behind the lateral cartilage, at the highest and most prominent part of the quarter of the hoof, and directly under the coronary frog-band. This is the point where we usually find the external sinus in cases of quittor; and beneath it internally is a plexus of bloodvessels, representing the confluence of all the principal veins of the foot. The large artery lies further behind it in the living or a fresh subject, although in a dried specimen it appears to be in close proximity with the veins. Mr. Bracy Clark, in his work on the Foot of the Horse, described it, for the first time, by the distinguishing name of *Canalis Vasiferus;* and from amongst many interesting remarks I extract the following passage as most descriptive of his views respecting its important functions.

*Pp. 113.—"I may further observe of this remarkable plexus of bloodvessels and cavity that is found behind the cartilage, and which appears conspicuous enough in a vertical section of the foot transversely made across the quarters, that it is of an oblong shape, and has not before received much attention; and I have been led to consider it as a kind of reservoir for receiving the blood that may be pumped up during any strong or rapid exertions of the animal from the effects of the motions in the hoof of the bones of the foot, which, accumulating in these large vessels contained in a spacious cavity, is thus prevented from creating derangement to the general current of the circulation, or causing by its impetuous course any sudden rupture of the finer vessels of the foot." The best manner of proceeding to obtain a sight of this cavity is, having procured a mature and tolerably perfect foot, to remove the wall carefully with the saw and knife, and afterwards the cutidura and cellular membrane, so as to have a fair view of the whole external surface of the great podal cartilage. Then with a scalpel cut out an oblong piece, about half

* Hippodonomia, or the Structure, &c. of the Horse's Foot. 1829. *Renshaw.*

an inch wide and three quarters long, of this beautiful structure from its most prominent lateral part. The cartilage is about one-fifth of an inch in thickness; and when the piece described is raised from its place by the point of the knife, it will be found to have an exceedingly slight attachment by a few points to the thin membrane below. On the entire removal of this piece of cartilage we obtain a fine view of the large veins forming the plexus spoken of above; they are lying or hanging loosely in an open space, of size sufficient to contain a hazel-nut without difficulty or much compression of the bloodvessels, and consequently capable, during the violent exertions of the horse, of permitting them to dilate greatly, and receive, as in a reservoir, the blood which must be forced upwards. There certainly is no organ in any animal which has such an obvious demand for a provision of this kind against sudden rupture, since the foot of the horse (itself a most vascular and sensitive structure, and richly supplied with bloodvessels) may be otherwise said to be enclosed in a tightly-fitting horny box, which precludes any lateral extension of the vessels themselves; and although the veins are anastomosed in a beautifully intricate manner, and there are no valves below the fetlock joint to cause any impediment to a free return of the venous fluid, yet it is probable that these precautions would have proved insufficient (even supposing the foot was permitted its natural action by expansion shoeing), had it not been for the bounty of nature in providing this reservoir within the foot itself. Mr. B. Clark has observed that this cavity is largest on the inner side of the foot where the circulation is always greatest. It is most appropriately placed in a part of the foot which is ordinarily free from pressure, and securely protected by the overhanging arch of the cartilage, so that this part is seldom primarily injured. But if the cartilage receives a violent blow, or from any cause leading to high inflammatory action of the foot generally, the infundibulum becomes the seat of the highest excitement, which frequently causes the death of a portion of the cartilage covering the part. The disease is then called a quittor, and for which the best remedy is skilful extirpation of the diseased portion of cartilage.

There are many other considerations which force themselves upon the mind respecting this newly-discovered structure; but, lest this paper should extend too far, I forbear them for the present.

THE VETERINARIAN, MARCH 1, 1834.

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

ON the 28th of January, the usual annual dinner was given by the pupils of the Veterinary College to their teachers and examiners. The attendance of the pupils was numerous, and their general appearance and conduct evinced the growing respectability of our profession; but we do not recollect to have seen so few of the magnates (Messrs. Brodie, Green, and Mayo comprised the whole), and the practitioners were very thinly scattered.

The dinner was good—the wine rather better than usual—the stewards attentive—the chairman, Sir Astley Cooper, in good health, and Mr. Coleman looked as well as he did ten years ago; and yet there was a flatness in the whole affair. There were none of those flights of pleasantry from the President, which used to set the table in a roar—no bandying of jests which wounded not, between the friends of many a year—no laboured encomiums on our art by "the invited," and "flights of imagination over new continents of science rich with inexhaustible treasures:" but there was a general coldness and formality, which an enemy would have said "was devised to set a gloss on faint deeds and hollow welcomes;"—and, whether it be a good or a bad thing to record, the meeting broke up early, and without the youngsters having their hour or two's carousing after the old ones were gone.

The old toasts were given, and the old speeches made, but formal and short, with two or three exceptions which it will be our duty to notice.

The President introduced a new toast, "The Medical Examining Committee." He said that it was admirably constituted—that it contained some of the best anatomists and physiologists in the world, by whom the knowledge of general anatomy and physiology which the candidate for a diploma possessed might be best and most surely appreciated: and that it contained, like-

wise, some of the best veterinary surgeons—the Professor and the Assistant Professor, by whom the improvement of the pupil in veterinary science might be unerringly ascertained. These were the advantages and the security afforded to the public: and then, as it regarded the student, what a treasure to him were the signatures of such men as Hunter, Fordyce, Cline, Babington, Green, Brodie, and Mayo, attached to his diploma! A document so attested, would be a sure passport to practice and to high estimation.

We are not disposed now to go over the old ground of debate,—the construction of this board of examiners. It is a board perfectly *sui generis*—no other branch of science is degraded by one like it. Common sense tells every one else, that the professors of an art are the best, the only judges of the proficiency of the students of that art; and that it would be the most flagrant of insults, an indelible brand of incompetence and dishonour, to delegate that examination to others.

We will not dwell on the notorious fact, that of all men in society, physicians and surgeons in a large town, are, by their education and their habits, the most ignorant of the horse—his structure, so far as useful purpose goes, his points, his management, his diseases, and their treatment. We impugn not hereby the sterling acquirements, the well-earned reputation of the medical portion of the examiners' board. Some of them are men whose memory will live until the lamp of science is for ever extinguished. But there is an incompatibility of pursuits and acquirements; and such men as Brodie, Green, and Mayo (we take them because they alone were present at this meeting—we do not invidiously select them from their brethren), cannot by possibility be *horsemen*, and they would expose themselves to no little ridicule if they pretended to be so. What is the fact? In the course of our professional rounds, we go into a stable worse conducted and managed than any of the bad ones by which we are annoyed:—that stable is a physician's or surgeon's. We see a system of peculation, more atrocious than others which yet make our blood boil—a disobedience of order, a contempt of controul, a series of the most despicable artifices, and a systematic disregard of the comfort and a waste of the powers of the horse:

—that stable belongs to a medical man. We see a gentleman walk into a dealer's yard, and every flashy, showy, worthless, or doubtful screw is brought out, and, at length, one of them is palmed upon the unwary customer:—we observed from the beginning that he was considered as fair game:—he was a medical man. There is, we repeat it, an incompatibility of pursuits and acquirements; and he, whose youth is spent in the lecture and dissecting-rooms, and his manhood in the hospital or the operating theatre or the bedside of his patients, is not, and cannot be a sterling horseman: and so he would candidly confess to us in private conversation. He can have no business at our examiners' board.

But may he not inquire into the proficiency of the student in "general anatomy and physiology?" What! have we existed as a profession forty-odd years, and are there none among us capable of undertaking this simple task? We have long submitted to this motley committee, because we have a strong and indelible feeling of gratitude towards many members of the medical profession. We owed to them our professional existence—we have been indebted to them for many an act of kindness—nay, it was an act of kindness in them to become our examiners, when we had none among ourselves who were competent to the task. But now, that the veterinarian is no longer like the turnspit,

> Who climbs the wheel, but all in vain—
> His own weight brings him down again;
> And still he's in the self-same place
> Where at his setting out he was;

when we have those among us who will scarcely yield in their accurate views of "anatomy and physiology" to the best even of these examiners, and who have viewed those sciences (which our examiners have not), in all their bearings on veterinary practice; why, we say, that it is mockery to use such an argument. We will never be false to the claims of gratitude, but we can feel an insult as keenly as other men; and not feel it the less when it does not spring from a wish to wound, but from confirmed and unjust disparagement and contempt of us.

And then, as for the value attached to the diploma by the sig-

nature of the examiners ;—were we students of human medicine, we should feel the full force of the argument, and the signatures of such men would render the document inestimable: but to the diploma of a veterinary student such signatures are almost valueless—valueless in our estimation, and equally so in that of our employers—for such men, high as they may rank in their own profession, are not, and cannot be, judges of the veterinary practitioner. We have no hesitation in saying that the signatures of Castley, Dick, Clark, Percivall, Watts, and Field, would confer a thousand times more value on the document, in the estimation of the veterinarian himself, and of all his employers. These men are competent judges of that on which they decide ;—the present examiners know nothing about the matter, but they strangely pin their faith on the sleeves of others, when they affirm by their deliberate signature—what ?—not that the candidate is well versed in "general anatomy and physiology," according to the statement of the chairman, but that he is "competent to practise the veterinary art."

The plain truth of the whole matter is, that the practitioners of human medicine are struggling for the restitution of certain rights, and for a reform in the general management of their interests. That fight once fought, another must and will follow. The veterinary practitioner!—he has no rights which he claimsto have restored ; but he has a stronger, an irresistible claim—a claim for the acknowledgment of *legal existence and protection.* At present he is a kind of outcast. While the privileges of the medical practitioner are guarded by legal enactments, and his fair field of practice, and, what is dearer to him, his professional character are secured by the exclusion of those who have not proved themselves competent and worthy, the veterinary surgeon is elbowed, defamed, and robbed by those who frequently have no other claim than ignorance and presumption. This state of things must not, will not, continue ; the professional existence, and the rights and privileges of veterinary men, cannot fail of being soon admitted and secured.

The method in which this is to be accomplished, and in which alone it can be truly and honestly so, is by the legal establishment of a body similar to the corporations of physicians, surgeons,

and apothecaries; the original members of which shall be selected from the profession generally; (not, perhaps, necessarily excluding the conductors of certain schools, but altogether independent of them); and where veterinary men shall decide on the competence of veterinary students, and defend the rights of veterinary practitioners, and without a diploma from whom no one shall hereafter be permitted to commence practice.

This will, ere long, be claimed and granted; but then all *exclusive privilege* must merge in the general interest. It was as a feeler with regard to this that the new toast was proposed. How short-sighted must they be who would oppose this just demand! Some exclusive privilege must be sacrificed; but the number of veterinary pupils would speedily be doubled, trebled; and so would their respectability too. The prosperity of our art would take its date from the legal recognition of our claims, and the provisions that would necessarily result from that recognition.

There was another new feature, and a most important one, in Sir Astley's address to the students on that day. While the instructions delivered at the College had reference to the horse alone, so of the horse alone did we hear at these dinners, whether from the chairman, or Mr. Coleman, or the visitors. It was only last year that the reporter of the proceedings at the dinner complained that while "three of the invited ones addressed the meeting on the scope and bound of veterinary instruction, they all of them confined it to the horse, and to the horse alone."

At this dinner Sir Astley told the students that their attention must not be confined "to the horse alone," but extended to cattle, and other legitimate objects of their future care; and he illustrated this by an anecdote. He was lately travelling in a certain part of the kingdom, and he met with a veterinary surgeon whom he had known and respected in town; and after the common civilities of meeting, he asked him how, in the name of wonder, he came to set himself down there, for there could not be horses enough in his neighbourhood to provide him with bread and cheese, by the medical treatment of them. "Very true," was the reply; "but you must please to recollect that this

is a breeding country, and that my practice on cattle abundantly supplies all my little wants."

The readers of THE VETERINARIAN may readily suppose how truly and how much we exulted in the public admission of that for which we had been contending, and seemingly without effect, for many a year. At length the veterinary art is to be studied and practised *in all its branches;* and our oldest veterinary school is to be what it was designed to be, and no longer the only one in Europe in which a most important part of veterinary tuition is systematically excluded. The student is henceforward to extend his inquiries to the anatomy and treatment of the diseases of cattle, and other domesticated animals:—but then comes the question, how shall they make these inquiries, or gain this requisite instruction?—how shall they learn unless some one instruct them?—and how shall any one instruct them who does not know something about his subject?—and how shall he, how can he know any thing about it, without practice?—and how shall he practise when in the course of forty years he has not had so many patients? These are questions which we shall leave to those whom it concerns to answer. The chairman of the examiners' board has warned the students that their attention should be directed to a new object—a new one at the Veterinary College. He will, doubtless, be consistent, and remember this occasionally in his examinations; and, above all, he will not render himself chargeable with the mockery of pointing out a line of study without giving them the means to pursue it.

Another new feature, and likewise an important and a most pleasing one, occurred in the address of Mr. Coleman to the pupils. He spoke, at considerable length, and with much energy and eloquence, on the increasing respectability of the veterinary profession. He told them that, by virtue of the commission which some of their brethren bore, their rank in society was materially changed; and that, if they were faithful to themselves, the new ground which they might occupy would be contested by few. He exhorted them to acquire the information and the feelings and habits which might qualify them for that walk of life. He warned them against low associates, and low and degrading conduct; he impressed on them

the duty of maintaining the respectability of a rising profession, the responsibility they would incur if it was degraded by their inconsiderateness and folly; he advised them sedulously to cultivate the society of those who were once considered far above them, but with whom they might now mingle; and he spoke of the contempt with which they would be overwhelmed, if, by degrading habits and associations, they compromised the interests of that profession to which they belonged. "Yet," said he, "we must not quite forget the humble farrier, from whom we may be said to have sprung, and who is often possessed of much practical knowledge, and who is a valuable member of that class of society to which he has been accustomed to belong. Our recollections and feelings need not quite pass away, while the new ones which now legitimately belong to us should be permitted to exert their influence upon us."

We will not ask how consistent all this may be with certain comparisons that used to be drawn, and certain condemnations that were wont to be passed in another place; but we will say that such sentiments do honour to the instructor of the veterinary pupil, and ought to be engraven in indelible characters on the mind of every student.

Although there did seem to be an unusual formality about the meeting, a consciousness of something a little out of joint, a dread of something which possibly had no existence save in the imagination, yet it had its redeeming qualities, and the last two circumstances particularly give it peculiar interest and importance; and if such be the sentiments elicited, although tardily so, and if they be the harbingers of corresponding management and action, why these meetings will be what they should be,—pleasant at the moment, when conviviality, and friendly feeling, and enjoyment prevail, and more pleasant when recalled to memory, because they have been associated with the best interests of the profession to which it is our pride to belong.

Y.

Veterinary Medical Jurisprudence.

The Oration of Professor Renault at the Public Distribution of Diplomas and Prizes at the Royal Veterinary School of Alfort, August 28, 1833.

[Concluded from page 116.]

As yet, gentlemen, we have considered the question only with relation to the inconveniences that result from the diversity of *usage*; and although I have been able to point out but a part of them, you must be, doubtless, convinced that they are serious and numerous.

Let us now examine them under another point of view. We will consider ourselves for a moment as veterinarians, and prove, by a few examples, taken at hazard from among a thousand, to what degree the principles, according to which such and such maladies have been determined by *usage* to constitute unsoundness, are erroneous, and the data upon which the different durations of the warranty have been determined for each of them, are false.

Every person must be convinced that it would be unjust to authorize the return of an animal for a disease which the purchaser might have easily perceived at the time of sale, or for one that may be developed after the sale, and by the act of the purchaser. It may also easily be conceived that it is just to consider as unsoundness every disease that renders the animal unfit for the service to which he is destined, or that, although existing before the sale, was hidden at the time of it. Such, at least, are the principles which reason seems to prescribe: let us see how far *usage* corresponds with them.

I look at the synoptical table of Gohier, and I see (among the number of diseases constituting unsoundness, recognized by the custom of Franche Comté) quinsy with a duration of the warranty for forty days. Now, quinsy is acute inflammation of the pharynx, and which may commence and develop itself in the space of one or two days, and which also, as soon as it exists, betrays itself by symptoms sufficiently evident to convince the purchaser that the animal is ill. Wherefore, then, extend the duration of the warranty for forty days, with regard to a disease that may appear on the fourth day after the sale, and that may be presumed to be caused by some act of the purchaser, and which, if it had existed before the sale, could not fail of being recognized by him? Is not this, evidently, a crying injustice?

I see, a little lower down, that according to the *usage* of Provence and Bigorre, if the rot appears in a flock of sheep in the course of three months after the sale, the purchaser has the power to set aside the sale altogether, or to return the diseased sheep, and to demand restoration of the price, with that of the care and keep of them. It is, however, well known that the rot in sheep may develop itself in less than two months, if these animals are badly fed, and especially if they are put into low and wet pasture. Here, again, the vendor may have to answer for acts of which he is altogether innocent.

On the other hand I read, in the *custom* of Bresse, that in that country the warranty against epilepsy extends to nine days. In the *custom* of Haut Dauphiny the duration of the warranty against ophthalmia is also nine days; but these two maladies, which are exceedingly serious, manifest themselves by occasional attacks, during which alone they can be recognized; and the intervals between these attacks are often three weeks, or a month, or more.

What is the result of this? That a merchant in those countries, who wishes to get rid of a horse subject to either of these maladies, can do it without running any risk, by exposing him for sale soon after the cessation of an attack. What, then, becomes of the warranty offered to the purchaser by the *usage*? Is it not a bitter derision?

We will speak of another inconvenience of these long delays, applicable to every case. Among the diseases which are, with good reason, considered as unsoundness in most of the customs, there are some which are thus viewed, not because they immediately prevent the working of the animal, but because they diminish his variety of service, and abridge its duration; not because it is absolutely impossible to recognize them, but because it is necessary to observe them under other circumstances than those which can occur at the time of sale, in order to prove their existence. Broken wind is of this number; but, for reasons which we cannot comprehend, and which cannot be explained without reference to the times of ignorance when the *usages* were established, a warranty of forty days is accorded against this disease in the customs of eight or ten provinces. See here, among other inconveniences, that which has more than once happened. A man, for an occasion which can only be temporary, is unwilling, permanently, to charge himself with an animal that perhaps he may not be afterwards able to sell without considerable loss; he wishes also to avoid paying for the hire of the horse. What does he do? He knows that a neighbouring dealer has a broken-winded horse: he offers a good price for him, he buys

him. The animal serves for his journey, and then, after having had him thirty-eight or thirty-nine days, he states that the horse is broken-winded, and the vendor is compelled to take him back again.

It is necessary also to remark, that while we see certain vices classed in the list of unsoundnesses, whose trifling nature ought to have excluded them from that list; we observe others omitted whose serious character ought to have caused them to be inscribed in the first rank. It is thus, as we have already observed, that epilepsy is recognized only by the custom of Brest: immobility in the horse, and foot-rot in sheep, only by that of Normandy; farcy, by that of Brittany; ophthalmia is unsoundness only in Gascony, Bigorre, Armagnac, Bearn, Languedoc, Roussillon, and, some say, Haut Dauphiné; and the *custom* of Douai is the only one which gives the power of returning a horse that has a habit, exceedingly dangerous, namely, *viciousness*. It is also without question, that in some customs the maladies of the ox, the sheep, and the hog,—objects of a commerce so extensive and so interesting to agriculture,—and that in all of them that useful and laborious companion of the poor man, the ass,—have been forgotten. It is thus that no *usage* has spoken of amaurosis, that species of blindness without sensible alteration of the eye; that in no part is mention made of rabies, the most frightful of all maladies, and the germ of which may remain for a long time in an animal that has been purchased, without there being any thing to excite suspicion of its existence.

Finally, and it is a most lamentable circumstance, the *custom* of L'Artois is the only one which authorizes a demand for the return of the value of an animal that died within a few days after the purchase, and the cause of the death of which was recognized, at the examination of the carcass, to have existed anterior to the sale. But even here this custom does not extend to sheep or oxen.

We will suppose that a horse has been purchased some days, apparently full of vigour, and enjoying the most perfect health. He is harnessed to a carriage, and falls in the attempt to draw it, and dies in a few minutes after the fall. It is discovered, at the post-mortem examination, that his death was caused by the rupture of an old aneurism of the aorta.

Let us suppose another case; a horse, which, at the time of purchase, does not appear to have any thing the matter with him, is seized with violent cholic, and dies the day after the sale. On examination a large calculus is found in one of the intestines.

Is it not as clear as the day that in both these cases the cause of death had existence, but could not be recognized at the time

of purchase? Its effect on the animal cannot leave the least doubt as to its serious character. Would it not be just that in such cases the buyer should have a claim on the vendor for a return of the purchase money? But, as I have said before, the *usages* are silent on this point.

Permit me, gentlemen, to quote, in support of my argument, the opinion of a celebrated orator of the legislative body, and whose authority has been often invoked in favour of the conservation of these *usages*. Listen to what M. Faure said, in the sitting of the tribunal on the 12th Ventôse, year XII:—"The seller cannot refuse to restore the money under the pretext that the thing has no longer existence, but has perished since it came into the possession of the purchaser. It is sufficient for the purchaser to prove that it perished in consequence of its bad quality. In fact, as soon as this proof is obtained, it is evident that the purchaser ought not to be placed in a less favourable situation than if he had returned the thing before it had perished."

To all these imperfections, and errors, and contradictions which I have mentioned in this legislation according to *usage*, I could add many others without exhausting the objections to which it is exposed. I might ask, for example, if, since the epoch of the division of France into departments, the remembrance of the old territorial boundaries is not so much effaced that it would be very difficult even for a well-informed man to say of what province the country which he inhabits once formed a part—under the government of what parliament it existed—and, consequently, by what custom it ought to be governed in the purchase and sale of domestic animals?

In support of this, I will remind you of the certificate presented to the Tribunal of Commerce, in Paris, in the sitting of the 20th of January, 1832, signed by all the Advocates of Mortagne, attesting that that town was governed by the *usages* and *customs* of Perche, where the duration of the warranty is nine days; while it was maintained by M. Huzard, and with whose opinion the tribunal coincided, that Mortagne was formerly under the jurisdiction of the parliament of Rouen, where the duration of the warranty was forty days.

I could, moreover, speak of the singular position in which those judges were placed, who, on the same day, and before the same assembly, pronounced in one cause, that a horse ought to be returned for roaring; and in a second, the circumstances of which were precisely similar, that roaring was not unsoundness; and that, because these horses, the subjects of dispute, were bought in two cantons close to each other, and divided only

by an invisible line, and thus belonging to two provinces, the *usages* of which were not the same.

Then let me direct your attention to other judges, called upon to decide on the *usage* of a place, and giving their decision with extreme reluctance, because that usage is not written in any *custom*, while tradition as well as precedents fail them, since, during sixty years perhaps, no action of warranty has been brought on this point within their jurisdiction.

I might remind you of the embarrassment of the veterinary surgeon who is called upon by the tribunal to state whether a certain affection in an ox, which is brought before him, is unsoundness ; and to which it is impossible for him to reply, because he does not know what diseases are included under the barbarous terms of *plau*, and *tat*, and *gamer*, and *toune*, which are contained in the customs of that place.

I might demand, in fine, what is that *courbature*, admitted as unsoundness in almost all the customs of France, and what would, perhaps, be considered in a very different light by those who have read Solleysel, Bourgelat, Lafosse, Chabert, or Fromage de Feugre ? But, gentlemen, I will not longer insist on a point which must have been already decided in your minds, nor waste those precious moments which you are about to devote to us in the other portion of the duties of the day.

I will merely repeat that that part of our legislation which has reference to warranty and unsoundness is obscure ; and the incertitude of the tribunals of commerce on the question whether the " civil code" has preserved or abolished the usages, and the contrary nature of the decisions produced by this incertitude, are of daily notoriety.

While the opinion of the conservation of the usages has been adopted by the greater number, I have thought it right to demonstrate to you, by a rapid enumeration of the inconveniences and errors of that legislation, how little it is in harmony with the actual state of civilization; and I think I have accomplished this, if I have proved that this want of uniformity, so often unintelligible to or not known by the judges, so embarrassing to the practitioner, and which is founded on no principle, is often contrary to the suggestions of equity, reason, and justice; and, finally, if in shewing you the impunity or rather the encouragement which it offers to fraud, I have convinced you that it is subversive of all morality.

As to the character of the legislation which would result, by the adoption in the whole of France of the laws of warranty prescribed by the " code," I am far from thinking that it would put an end to all the inconveniences that I have pointed out.

Juster no doubt in its principle, yet it would not be precise, nor would it establish any particular case—it would leave to veterinarians differently instructed, and with opinions exceedingly different and even irreconcilable, the duty of determining the nature of the unsoundness, and the duration of the warranty—it would plunge us again in the incertitude from which we are endeavouring to emerge,—and, for a jurisprudence unjust, but fixed, it would substitute one, uncertain, arbitrary, and contrary to the only foundation of all legislation—fixidity and uniformity.

That, then, which we desire is a special law upon the matter—a law which shall clearly determine the affections and diseases that shall be considered as unsoundness throughout the whole of France, and the duration of the time of warranty that will best suit all ; and which will put an end to the annoying, and injurious, and numerous processes, which vague principles and contrary decisions have produced. This law, the progress of the veterinary art will now render easy to be established. It will meet the wants of the present period, and it will tear from a code, which Europe admires and envies, a page that presents a disgraceful anachronism.

Let us hope, then, that the time is not far distant when agriculture and commerce will be presented with this most invaluable benefit; and let us look with confidence to a government, whose solicitude for these two sources of our national prosperity is evinced by the character of the administrators with which it has surrounded itself.

Extracts.

On the Diseases of the Spinal Chord.

By M. Bouley, *V.S.*

[Concluded from p. 56.]

Having related eight cases of paraplegia in the horse, in all of which there were morbid alterations of the dorso-lumbar portion of the spinal marrow, I will now describe three in which there were lesions of the cervico-dorsal portion.

CASE IX.

Communicated by M. Renault, *and copied from the Clinical Report of* M. Vatel.

An entire draught horse, of an iron grey colour, eight years old, of good constitution, and sanguine temperament, was

brought to the hospital of the School of Alfort, Feb. 23, 1829, for enlargement of the lateral cartilages of the right fore foot, and which it had had six months. It underwent an operation, in which the carious cartilage was removed. During the operation the animal struggled violently, and on being released it could not put the lame limb to the ground. The fetlock gave way forwards as soon as the foot was placed on the ground. When the animal rested on the foot on that side, he did not seem to have any feeling, but supported himself mechanically; the whole limb flexing at the same time, and the horse threatening to fall every moment. This was attributed to a numbness occasioned by the hobbles during the operation, which lasted a long while. Friction was applied over the whole of the limb, and eight pounds of blood were abstracted. There was very little symptomatic fever.

27*th*.—The foot was placed upon the ground; the fetlock was always flexed: from time to time the animal struck the ground with the lame limb, and the concussion seemed to give him some pain. This shoulder was evidently lower than the other. Frictions of essence of lavender were used, morning and night, for three days.

March 3*d*.—The wound was healthy, but the limb remained in the same state. When the leg was pricked, the muscles contracted, and shewed that there were some remains of feeling.

7*th*.—There was gradual diminution of sensibility, and the power of moving.

8*th*.—Complete palsy of the limb. The whole of the limb was covered with a stimulating charge.

18*th*.—The animal was in good spirits, and fed well. We began to give the nux-vomica once every day, and increasing the dose in the following proportions, six, twelve, fifteen, and twenty grains.

25*th*.—The wound was going on as well as it possibly could do; but the motion of the limb is altogether lost, and the muscles are in a perfect state of atrophy.

27*th*.—The animal was abandoned, and destroyed.

The teres major, and the scapular portion of the triceps extensor brachii, were very hard. The articulations, and the nerves of the limb, did not present any alterations: the brain was sound. The spinal marrow, at the bending of the neck, was softened and changed to a pultaceous and red matter; this softening was about two inches in extent, and its principal situation was in the fasciæ corresponding with the paralyzed limb. Four pairs of nerves concurred to form the plexus proceeding from this softened mass; but we could not trace their origin into the

substance from which they were derived. The ganglion, resulting from the union of the two roots, was not altered. The arachnoid membrane was red at that place, with denser minute points of blood; the rest of the spinal marrow was in its natural state.

CASE X.

Selected from the Clinical Records of the School of Alfort, and communicated by Professor MOIROUD.

The horse which was the subject of this case was attached to an empty cart, which he drew on the 21st of January 1830, through the village of Maison Alfort, when the driver thought that he bent one of his hind limbs in a curious way, and seemed to fear to put it to the ground. Having immediately detached the animal from the vehicle, some persons endeavoured to reconduct him to the house of his master, who lived at a short distance from the place; but he had scarcely gone two or three steps, before his legs bent under him, and he fell. All attempts to raise him were fruitless: he was placed on a kind of carriage, and brought immediately to Alfort.

On its arrival, M. Moiroud examined it, and perceived that feeling was altogether destroyed in the middle and posterior regions of the body: the back was plainly included. Pricks made with a pin, and even with a bistoury, caused no pain. The right fore limb was less sensible, and less agitated, than the left. The posterior members executed some very extensive motions; the pulse was frequent, small, feeble, and almost imperceptible. Bleed to six pounds; use irritating frictions on the croup and the hind limbs; give purgative drinks, and throw up injections in which emetic tartar has been dissolved. Towards eleven o'clock at night the animal seemed to be a little more tranquil, the hind limbs were stiff, and less agitated.

On the following day the animal was better; sensibility seemed to be returning to the hind limbs; the pulse was more developed. The patient often lifted his head, and stretched it back over his shoulders; he made frequent efforts to rise, and with the assistance of some of the pupils, he was placed on his legs; but his hind limbs gave way afresh, and he soon fell again upon his litter. Bleed again to six or seven pounds; give white water with honey: apply synapisms to the thighs; and the same frictions as yesterday.

23*d*. —The symptoms became more intense; he lost all feeling behind, and the motion of the posterior extremities was almost entirely lost; but the action of the head and neck were more violent than ever. He lifted his muzzle in the air, ground his

teeth, and seemed to wish to rub his poll upon the ground: partial sweats soon followed. Camphorated drinks were given during the night. Frequent and tumultuous beatings of the heart rapidly succeeded, with abundant perspiration, great agitation, and death at seven o'clock in the morning.

Examination twenty-six hours after death.—The thoracic and abdominal viscera were in their natural state; the vertebral column presented, through the whole extent of the dorsal region, a bluish tint, and diffused a gangrenous odour, which was principally remarked on its inferior face, and over the ligaments and periosteum of the bones which formed this column. The neighbouring muscles were in the same state. This alteration appeared again, but indistinctly, towards the fourth lumbar vertebra, and propagated itself even to the sacrum. The spongy bodies of the vertebræ were black, and exhaled a very fœtid odour. The cellular adipose tissue, by means of which the dura mater adhered to the walls of the bony canal, was infiltrated with a reddish serous fluid. The substance of the spinal marrow presented, towards the thoracic enlargement, a complete softening. this alteration extended before, to the base of the third cervical vertebra, and behind, as far as the tenth dorsal. Beyond this point the spinal marrow preserved pretty nearly its natural consistence, until we arrived at the third lumbar vertebra, where the softening appeared again, but in a manner less complete; for it included only the superior fibres of that portion of the spinal marrow. The grey substance presented here a rosy tint, which it had not offered elsewhere. There was no remarkable lesion of the brain, except that the corpora striata were somewhat injected, and the substance of the brain itself slightly pointed.

CASE XI.

In the course of the month of February, Mr. Aubert wished M. Tassie to attend to a grey, entire horse, aged six years, which, standing harnessed to a cart in the street, had fallen, and could not get up again. That veterinarian immediately recognized the symptoms of complete palsy of the hind limbs, and treated the case accordingly.

On the following day he perceived that the action of the fore limbs was becoming very limited, that palsy was attacking them. The disease now made rapid progress, and on the night following the horse expired.

Examination, conducted by M. Tassie and myself, thirty hours after death.—We remarked some traces of inflammation on the abdominal viscera: the lungs and the heart were sound. The adipose tissue, which united the dura mater to the vertebral ca-

nal, was filled with effused blood from the lumbar enlargement to the base of the twelfth dorsal vertebra. In the whole of that space the dura mater was very red, and slightly thickened; the fluid contained in the sheath was coloured, and the vessels of the pia mater were injected. The spinal marrow did not present any remarkable alteration here; but from the tenth dorsal vertebra to the third cervical it was softened; it was converted into a bouillé-white, yet pointed with blood: its grey substance was somewhat reddened, but its membranes were perfectly sound.

This case seems to me a very interesting one, in that it exhibits, in the same subject, isolated morbid changes of the spinal chord, and of its envelopes.

When describing the general symptoms which characterize diseases of the membranes of the spinal chord in the horse, I said that these affections were as yet too little known for it to be possible to distinguish each by its particular symptoms. I confined myself to those which had fallen under my own observation, and which appeared to me to be able to throw some light on the diagnosis of these maladies.

The remarks which I have made on this subject have been few, and perhaps not very conclusive. I feel it necessary, however, to repeat them here. It seems to me, that the animals that have died, whether of congestion or of rachidian meningitis, experienced the most violent pain, continual agitation, and convulsive movements, and which we only observed in a very inferior degree in those in which the spinal marrow alone was affected. I will not, however, presume to represent these aggravated symptoms as characteristic ones, but, on the contrary, I will repeat, that, as yet, we do not possess any special symptom by which we can distinguish one affection from another.

§ V.

The etiology of diseases of the spinal marrow in domestic animals is as yet too little advanced for it to be possible to produce any thing truly exact and conclusive on the subject. We will nevertheless attempt, so far as it regards the horse, to cast some light on this point of veterinary pathology, hitherto so obscure.

The revulsion of a cutaneous malady; the neglect of an accustomed bleeding; sudden stoppage of perspiration; want of exercise; over-feeding, &c. &c.; in a word, all the general causes of inflammation may doubtless act upon the spinal membranes as surely as upon any other organs, and produce irritation there. Nevertheless, if we endeavour to connect any

single one of these causes with inflammation of the spinal chord or its membranes, as, for instance, when palsy suddenly attacks the horse, we must acknowledge that we cannot find any one among them possessed of sufficient power to effect this; all acting too mildly to produce a disease whose attack is so sudden and its progress so rapid. The violent efforts which we exact from certain horses are much more likely causes of this affection. This opinion will probably appear better founded, if we recollect the circumstances that attended the cases which have been related; that palsy has chiefly attacked those animals which have been subjected to hard work, and that its principal seat has been in the dorso-lumbar region; that is to say, in that point of the vertebral column which is least supported, where the greatest movement takes place, and where the most violent efforts are made.

Beside these occasional causes, there are, without doubt, some occult ones, with which we cannot yet fairly grapple. There exist in certain horses particular inappreciable predispositions, which render it impossible for us long to ward off the attack of this disease. It is probable that sanguineous congestions often precede inflammations of the spinal canal in the horse; and we will say that the considerable development of the spinal membrane, the important functions which it performs, the isolation of the veins of the spinal chord, the absence of valves in those vessels, and the slowness of the circulation which is the necessary result of this, would unavoidably dispose this animal to apoplexy of the membranes of the chord, and to all its consequences; that is to say, to spinal meningitis, and to inflammation and softening of the spinal marrow.

§ VI.

The sudden attack of these diseases of the spinal chord in the horse, their rapid march, and, above all, the organic lesions which they cause, leave no doubt as to the inflammatory nature of these affections, and the antiphlogistic treatment with which they should be combated. Abundant bleedings, practised at the jugulars, the saphenas, or the tail, and repeated more or less frequently, according to the state of the pulse, the strength of the patient, and the intensity of the disease;—mucilaginous drinks, strongly sweetened with honey—emollient injections—and cataplasms of the same nature applied over the loins;—these are the means which should be adopted at the commencement of the disease. Some slight purgatives should be added to the drinks when the evacuations are rare and the belly corded. The sulphate of magnesia (Epsom salts) appears to be the pre-

ferable aperient; and it may be given under these circumstances, in doses from four ounces to a pound, without the least danger. Revulsives applied to the thighs are also indicated; but they ought not to be employed until twenty-four or thirty-six hours after the appearance of the first symptoms: if they are used before this, they are apt to increase the irritation, and do more harm than good.

The success of the treatment depends principally on the bleedings; the other means can only be considered as accessories. For the bleedings to produce good effect, it is necessary that they should be made in time, that is to say, at the beginning of the disease. We cannot be too prompt in the treatment of this malady, for the least delay may become extremely prejudicial to the animal.

On the second or third day, these maladies ordinarily take a favourable or unfavourable turn: when, at this period, the symptoms increase in intensity, we may expect a fatal issue; while, on the contrary, we may encourage some hope of success, if a slight amelioration is observed in the general state of the patient; and especially if sensibility and the power of motion seem to be reappearing in the paralyzed limbs.

The horses which do not succumb under the progress of spinal inflammation, and we have said that they are very few, pass through a period of convalescence exceedingly various in length. Most of them retain for a long time, in the hind quarters, a considerable degree of weakness, which is sometimes confined to one limb. We employ dry and spirituous frictions, and strengthening charges, with considerable success in these cases. Gentle exercise is also a very useful auxiliary.

Not willing to leave any doubt as to the advantages that may be derived from this mode of treatment in some cases, although very few, I will introduce some records of paraplegia in the horse being successfully treated in this way. Most of the facts occurred in my own practice; some, however, have been communicated to me.

CASE I.

On the 12th of February, 1823, I was desired to attend an aged, entire, bay horse, which, returning from his work six hours before, had fallen upon his litter, from which it seemed impossible to raise him. The animal fed well, and seemed to suffer little; the pulse was full, regular, and slightly accelerated: from time to time the fore limbs were violently agitated; their sensibility was almost gone; in a word, the horse presented symptoms of the most perfect paraplegia. I ordered two bleedings,

of ten pounds each, with an interval of three hours, and emollient drinks and injections every hour.

13*th*.—The animal is nearly in the same state: bleed again; insert two setons in the thighs; continue the same treatment.

14*th*.—A remarkable improvement was observed. Sensibility and the power of motion were evidently returning to the paralyzed limbs. Continue the same drinks, with the addition of half a pound of Epsom salts.

15*th*.—The animal could get up of its own accord, and remain standing about ten minutes: the symptoms of paraplegia gradually disappeared; and, in about twenty days, reckoning from this time, the horse was completely recovered, and returned to is usual work.

CASE II.

May 20*th*, 1824.—A merchant put under my care a grey Hungarian cabriolet-horse, about eight years old, and that, about twelve hours before, had been seized with palsy of the hind limbs. The patient was stretched on his right side; he appeared to suffer very much, notwithstanding which, he was ready to eat; his pulse was small and very quick; the paralyzed limbs were deprived of all power of motion, but preserved almost their natural sensibility; some partial sweats were observed; and the fæces were discharged without difficulty. I ordered two bleedings of eight pounds each, with emollient drinks, and injections, and poultices over his loins.

21*st*.—No change. Bled again to six pounds: continue the other treatment.

22*d*.—Still in the same state. Cut off the tail, and continue the same treatment.

23*d* and 24*th*.—Evident improvement: there is some slight power of motion in the hind limbs.

25*th*.—The animal, with the assistance of several persons, got on his legs and walked some paces; his gait was staggering, and he soon fell again on the litter.

26*th* and 27*th*.—The improvement continued; the horse got up of his own accord, and remained standing some minutes. He was turned into a large stable, well littered down: dry and spirituous frictions were applied to the loins.

From this time the symptoms lost some of their intensity every day, and the animal very slowly regained his strength. On the 30th day he was put to light work, but he did not entirely recover for three months, exhibiting some pain in the right hind leg, which prevented him from trotting, and rendered him unfit for a cabriolet.

CASE III.

March 15*th*, 1825.—An entire grey horse, six years old, belonging to the postmaster at Sévres, was harnessed with four other horses to the diligence which was going to Paris. Having arrived at the end of his journey, the driver perceived that the horse could scarcely stand on his hind legs; he hastened to detach him from the harness, and in a moment he fell. Not being able to get him up, he was placed on a sledge and carried to a neighbouring house. I was called to see him two hours after the appearance of the first symptoms. I recognized all those of paraplegia, and I advised an antiphlogistic treatment. The proprietor, believing that the state of the horse depended on indigestion, would not at first adopt my opinion; but he was so far influenced by my entreaties, that in the course of the day three successive bleedings, of six pounds each, were practised. They produced the happiest effect; and at night we began to observe some slight movement in the hind limbs. On the morrow, the animal raised himself several times, and remained standing a few seconds. The improvement rapidly proceeded, and, on the fifteenth day, the patient was put to light work; and, at the end of two months, he took his ordinary post in the diligence.

CASE IV.

An entire draught horse, ten years old, was seized with palsy on the 20th of April, 1825, and confided to the care of M. Auror, V.S., at Bourg Narine. Being consulted on the case, I strongly urged that veterinarian to adopt the antiphlogistic method; and twenty-four pounds of blood were abstracted in the course of one day. These bleedings produced a change so favourable, and a re-establishment of health so rapid, that on the sixteenth day the animal returned to his usual work and regimen.

CASE V.

May 10*th*, 1826.—Being called to attend a horse, I found him stretched on the pavement, beating himself about, and making vain attempts to rise. I learned from the driver that he had been harnessed to a timber carriage, that all at once his hind limbs seemed to fail, and, after staggering a hundred paces, he suddenly fell. The general state of the patient leaving no doubt as to the nature and seat of the disease, I immediately bled him to the extent of ten pounds, and pointed out the course of treatment to be pursued. I saw this animal no more; for, being

placed on a carriage, he was taken to Bursie, and confided to the care of Professor Vatel, who has been so good as to give me some details of his proceedings, and also the following case, for which I beg to tender my thanks:—

"At my first visit the patient was lying on his left side; his body was covered with sweat; the pulse was full, hard, and accelerated; the hind limbs had lost all power of motion, but their sensibility remained; the fore limbs were agitated convulsively: the animal retained his appetite, and endeavoured to eat his litter. He was bled to the extent of ten pounds; a restricted diet was ordered; and mucilaginous drinks and injections. He tormented himself during great part of the night, in endeavouring to get up, raising himself upon his fore legs. The injections produced an evacuation of excrementitious matter, announcing a perfect digestion.

"On the morrow, in the morning, he was in the same state; the posterior limbs were wide apart, and he often looked anxiously at the region of the pubis. The bladder was distended, and I pressed lightly upon it, and forced out a great quantity of water. I bled him again to the extent of ten pounds, and pursued the same course of treatment. At two o'clock he could slightly move the hind limbs, but not so as to support himself. Encouraged by the improvement, I repeated the bleeding. At night, assisted by several persons, who held him up by the head and by the tail, he arose: he staggered; and his hind limbs bent; but, being supported by them, he took courage, and kept himself up. He remained up eight days, when he attempted to lie down, and afterwards raised himself very easily. His walk was very uncertain, and he continued to shew great weakness in the dorso-lumbar region: we covered that part with pitch, and turned him loose into a large stable. At the expiration of five weeks, the horse returned to light work, but not to his usual employment until three months had elapsed."

CASE VI.

A horse fell in the street; he could not be raised, and was drawn on a litter of straw into a neighbouring court, where he was drenched with some hot wine. I saw him two hours afterwards, and thought that I recognized the existence of an acute affection of the spinal marrow. The body was covered with sweat; the Schneiderian membrane was red; the pulse was full, hard, and accelerated. The animal attempted to get up, but could not accomplish it; the hind limbs were immoveable, but they nevertheless preserved their sensibility. I bled him to ten pounds, and gave cooling acidulated drinks. In the evening the bleeding was repeated to six pounds.

On the morrow the hind limbs were agitated from time to time. We endeavoured to raise him, but could not accomplish it, for the hind quarters bent under the weight of the body. I practised another bleeding.

During the course of the day I was enabled to raise the patient, who sustained himself very well. The strength of the horse returned by degrees, and on the fourth day he was enabled to return to Charington. A month after the accident he was at his usual work.

It would be useless to remark, that the facts which we have recorded, and the curative treatment that we have pointed out, have relation only to *acute* affections of the membranes of the spinal chord. As to chronic maladies of the spinal chord and its meninges, they have never yet been sufficiently observed; and the cases being on other accounts often occult, and, from their nature, always incurable, we will not endeavour to indicate the treatment which they may require. We will only say, that, in cases where their existence is suspected, adhesive charges, vesicatories, moxæ, the cautery, and purgatives, will be the best means to employ.

Resuming the subject of our memoir, it seems that we may draw the following conclusions :—

First, That acute affections of the spinal marrow and its envelopes are frequent in the horse.

Secondly, That these diseases are rarely isolated.

Thirdly, That they manifest themselves by symptoms of a general nature, and that there is no particular one by which they may be distinguished from each other.

Fourthly, That they may occupy the whole extent of the spinal membranes, or only a very small portion of them.

Fifthly, That the dorso-lumbar region is their most ordinary seat, and that in this case paraplegia, more or less complete, is the constant symptom.

Sixthly, That these maladies attack horses of all ages, but particularly young, strong, and vigorous animals, and that have submitted to hard work.

Seventhly, That no precursory symptom announces their approach.

Eighthly, That their attacks are ordinarily sudden, and their progress always rapid.

Ninthly, That the causes which produce them are often known.

Tenthly, That these affections, always serious, often resist the most rational method of cure.

Eleventhly, That they always appear to be of an inflammatory nature in the horse.

Twelfthly, That the antiphlogistic treatment is that alone with which they ought to be combated.

Miscellanea.

The Stables of the Ancients.

In The Veterinarian for November, we described the methods practised by the ancients in breaking their horses. The following description of their stables is equally interesting, not only to the antiquary, but to the veterinary surgeon.

Stable was a generic term, applied to retreats of animals of all sorts, and to brothels and road inns; *præsepe* was loosely used in the same manner, but *equile* was the definite term for our stable, and *præsepe* for the manger*. The latter was called also by Vegetius *patena*†, defined by Columella *vas latum*, a broad vessel.

The Greek and Roman heroes were horse-breakers. Andromache watered the horses of Hector, and Xenophon wrote an elaborate treatise upon horsemanship. From him Berenger‡ extracted the following description of a Greek stable:—It was to be so situated, with respect to the house, that the owner could see his horse frequently; and the stall was to be so managed, that the provender could not be easily stolen out of the manger.

The floor was to decline, and to be pitched with stones, each being about the size of the horses foot, a practice still in use; and, as now, the horses were confined to the manger by a halter. The stable-yard was also paved with round stones, bound with a rim of iron to keep them close together. The intention of this paving was to harden the hoofs, shoes not being then worn. Besides the stable-yard, there was a place for the horses to roll themselves, and Apuleius, when metamorphosed, mentions the pleasure which he found in such an act.

When the horse was to be cleaned he was muzzled, and led out of the stable. The groom stood sideways, that the horses might have a better appetite: they were turned away from the manger after the first meal.

As to the Roman stables, they had, of course, distinctions of elegance, according to the rank of the parties; and the accounts of the old authors shew that the construction of the rack, manger, and windows were connected with fanciful medical principles, one of which was that moonlight was injurious to horses§. In a general view, Columella recommends that the stables should not be built of a height greater than that under which a horse or an ox could conveniently stand. The goddess *Hippona*, which Luterius contends ought to be denominated *Epona*, was the pa-

* Suet. Calig. iv, Burm. Petron. 41.
† Re Veterin. i, 56.
‡ Horsemanship, i, 232, 238.
§ Alberti, f. lxxiv, b.

troness of horses, and *Apuleius** mentions a pier for supporting beams, upon which pier was placed an image of the goddess *Epona*. At the inn at Pompeii every horse had a separate stable; but Varro mentions a division by bars, called *longurii*, between the mangers (*præsepia*). The hay, which was particularly directed to be dry, was placed in a loft (*tabulatum*), and the other general food was barley†.

The litter and dung were removed every day; for, no shoes being used, it was thought that standing in warm moist matters would impede the induration of the hoofs. "*Ne sternis comberat ungulas cavendum.*" Palladius recommends strong oaken planks with straw to be placed, that it might be soft to the horses when lying down, and hard to them when standing.

According to Juvenal, figures of gods were painted upon the mangers; and in imperial stables was annexed a portico painted with subjects relating to the public exhibitions.

Lardner's Cabinet Cyclopædia, No. 47, Arts and Manufactures of the Greeks and Romans

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Legend of the Schlagen Baa, or Serpent's Bath in the Duchy of Nassau.

Once upon a time there was a heifer with which every thing in nature seemed to disagree; the more she ate the thinner she grew; the more her mother licked her hide, the thinner and more staring was her coat:—not a fly in the forest would bite her;—never was she seen to chew the cud; but hidebound and melancholy, her hips seemed to be actually protruding through her skin. What was the matter with her no one knew. What could cure her, no one could divine. In short, deserted by her master and species, she was, as the faculty would term it, "given up."

In a few weeks, however, she suddenly reappeared among the herd, with ribs covered with flesh, eyes like a deer, skin sleek as a mole's, breath smelling sweetly of milk, and saliva hanging in ringlets from her jaw! Every day seemed to confirm her health; and the phenomenon was so striking, that the herdsman, having watched her, discovered that regularly evening she wormed her way in secret into the forest, until she reached and refreshed herself at a spring of water haunted by harmless serpents, when full grown, about four feet in length.

The circumstance, it seems, had been almost forgotten by the peasant, when a young Nassau lady began to shew exactly the

* Met. liii, 66 ed. Rip. † Varro, Apul. &c.

symptoms of the heifer. Mother, sisters, friends, father, all tried to cure her, but in vain; and the physician actually

> "Had taken his leave with sighs and sorrow,
> Despairing of his fee to-morrow;"

when the herdsman, happening to hear of her case, prevailed upon her, at last, to try the heifer's secret remedy; she did so, and in a very short time, to the astonishment of her friends, became one of the stoutest young women in the duchy. What had suddenly cured one young lady was deemed a proper prescription for another, and, all cases meeting with success, the spring gradually rose into notice and repute. I may observe, by the by, that even to this day horses are brought by the peasants to be bathed; and I have good authority for believing, that, in cases of slight consumption of the lungs (a disorder common enough among horses), the animal recovers his flesh with surprising rapidity: Nay, I have seen even pigs bathed, though I must own that they appeared to have no other disorder except hunger.

Bubbles from the Brunens of Nassau.

Prescription for a Cold in Horses.

Take a bottle of strong beere, boile it a little, and then scumm off the froath. Then take ½ lb. of raisins of the sunne, a head of garlicke, and stampe them together. Then take a quarter of an ounce of tobacco, and 1d. worth of treacle, and 2d. worth of browne sugar candye; 1d. worth of licoras, and as much anis-seedes. Let them boyle together a pretty while in the beere, and then straine them very cleare, and lett it stand until it be cold: then give it the horse, and ride him a little, and set him up warme, and three houres after give him a mash.—*Harleian MS.*

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MR. YOUATT'S VETERINARY LECTURES,

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LECTURE XL.

The Membranes of the Spinal Marrow—The Origins and Distribution of the Spinal Nerves.

OF the compound spinal nerves, of which I spoke in my last lecture, there are thirty-six pairs. I find the first of them at the very commencement of the medulla spinalis; it is the *sub-occipital*, or, more properly, the *first cervical nerve*. It arises in the way that I have already described from the lateral furrow on the superior and inferior surfaces of the spinal chord; the fasciculi from the superior surface converging, and forming a ganglion—the fasciculi from the lower surface converging, uniting with the other beyond the ganglion, and the two trunks entering into one sheath, and forming one inseparable compound nerve.

The Membranes of the Spinal Nerves. The Dura Mater.—There are, however, some material differences between this compound nerve and the only one, the fifth, which I have yet examined: and, glancing over the spinal canal, we perceive that these differences are common to all the nerves of the spine. We can trace, on the spinal chord, the membranes which envelope the brain; but there are some peculiarities about them which deserve our observation.

Within the cranium the dura mater adheres to the bone. It is the internal periosteum; it continues to line the cavity until we arrive at the foramen magnum; it adheres closely to the edge of the foramen magnum, and also to the upper edge of the foramen in the atlas, which is the commencement of the spinal canal. That edge, however, being passed, it is no longer the internal periosteum of the bone: the spinal canal has a periosteum of its own, and a very singular and effectual one—a ligamentous as well as membranous one. The dura mater is perfectly detached from it, but continues to envelop and to protect the prolongation of the brain, and in a manner best suited to its altered situation

and character. It is still a dense and firm membrane, but it has acquired an elasticity which it had not before.

The interposed Cellular Substance.—It is still the proper investing membrane—the *theca vertebralis;* but the cavity in which it is placed admits of very great change of direction and calibre, and is composed of a succession of joints, which, during the waking hours of the animal, are in almost continual motion. The spinal chord must not be affected or injured by these changes, therefore, as I have said, the dura mater, now the *theca vertebralis,* is detached from the parietes of the canal, and there is interposed between it, and the bony circle around it, a reticulated membrane, some of the cells of which are filled with adipose matter, and others with serous fluid, and which, combined together, will form the most effectual resistance to any occasional concussion or pressure. From the delicacy of the membrane, so contrived that it shall adapt itself to every motion or change of form in the bony canal, it has a gelatinous appearance; the fluid which it contains, however, has not the slightest viscidity; and this fluid is enclosed in separate cells, that the lesion of some may not endanger the general safety of the chord.

The inner Membranes of the Chord.—This interposition of membranous and adipose and aqueous matter would seem to afford a tolerably secure protection to the spinal chord; but, to render assurance doubly sure, there is a similar provision within the theca. The *arachnoid coat,* if such it be, is no longer a gossamer secretory membrane floating between the dura and the pia mater, but it, too, takes on a reticulated, cancellated structure: it is composed of innumerable cells, containing, likewise, a limpid fluid, and performing the same office of defence; or, rather, completing, and that beyond the reach of common injury, the defence of the spinal chord.

The admirable contrivance of this interposed Cellular Substance.—Now, gentlemen, please to observe the effect of this. That portion of the spinal chord which assumes a somewhat vertical direction in the neck is suspended by a thousand elastic springs, and surrounded by a yielding elastic substance whether the animal is grazing or employed in our service, which, in all the extensive changes in the direction of the neck, afford a security against concussion with which no complication of springs of human contrivance will bear the slightest comparison. You see this yet more evidently in the horizontal dorsal part of the spine; there observe the action of the elastic suspensory chords or springs above, and the downy yielding, yet strong, illacerable cushion beneath; add to this the elasticity gained by the cartilaginous, ligamentous structure and mechanism of the joints of the spine,

and you have the most perfect illustration of benevolent contrivance of which you can form any conception. Compare the increase of this cellular interposed substance in the spinal canal of the quadruped in whom the rapidity and extent of the changes in the direction and calibre of this canal, whether in the natural motion of the animal or the forced exertion which we sometimes brutally extort from him, require additional provision against injury—compare, I say, the relative proportion of this interposed substance in the horse and in the ox, both within and without the theca, and our subject is complete.

The Ligamentum Denticulatum.—This interposed cellular substance assumes a more condensed form at the side of the spinal chord, and is there closely connected with the pia mater within, and, by a line of *tooth-shaped* prolongations, with the dura mater without; hence it is termed the *ligamentum denticulatum.* It is not, however, any separate ligament, but a condensation of the arachnoid membrane or interposed substance, and which is thus deprived of its cellated structure and fluid contents. I need not point out to you the additional security to the spinal chord which this affords, by limiting the motion of the chord in a way which the extensible strings above and the elastic cushion below could not effect; and by giving sufficient firmness of attachment to prevent laceration of the roots of the nerves in sudden and forcible flexion of the spine. It passes, in its condensed form, between the superior and inferior root of the spinal nerves, being attached to the pia mater during its whole extent, and to the dura mater in the intervals between the nerves.

The sub-occipital nerve, or *first cervical* nerve, or *first nerve of the spine,* arises, as I have described, at the very commencement of the medulla spinalis, and from the *lateral furrow* on its superior and inferior surfaces. Proceeding from this furrow, its roots are referrible to, and can be traced from, the *central column* above and below. The fasciculi from the superior surface are few, and comparatively large, and they unite and form, or pass through a ganglion; those from the inferior surface are smaller and more numerous—(they err who speak of any definite number—that varies in different nerves and different subjects); they are more superficial, more easily lacerable; they converge, unite, join the other branch beyond the ganglion, and then, escaping from the dura mater, we have the perfect compound nerve of sensation and motion. Having pierced the dura mater, it emerges from the spinal cavity through a foramen in the anterior part of the atlas; and no sooner is its escape accomplished, than it divides into two main trunks, which subdivide and ramify in every direction, and

give the power of motion to, and bestow sensation on, the neighbouring muscles and parts.

The Anastomoses of the Nerves.—This is not the time to trace minutely the course of these or of any of the spinal nerves: I shall have more satisfactorily to speak of them when we describe the various muscles and portions of the frame, and the nervous influence with which each is endowed. All that I shall attempt, at present, is a mere sketch of their origins, connexions, and ultimate destination: and, for minuter information, I would refer you to that admirable work of my friend Mr. Percivall, the "Anatomy of the Horse," in which he describes the course of the spinal nerves. I shall scarcely dare, in any great degree, to deviate from his very accurate description of them.

I would beg your attention to the evident fact of the compound nerves of the spine dividing into innumerable ramifications, and more particularly anastomosing with branches from the neighbouring nerves. This sub-occipital nerve has direct communication with the second cervical, the lingual, the recurrent, the glosso-pharyngeal, and the great organic nerves, and indirectly with the fifth, the seventh (portio dura), and almost all the cervicals. In the second cervical the direct and the indirect anastomoses increase, and they increase as we proceed down the frame; and not only between considerable branches of the nerves, but the minutest ramifications of them; and not merely a single anastomosis, but numerous ones between any two given nerves. They meet—they separate—they re-unite, they admit others into association,—they coalesce with every neighbouring one—they extend the bond of union to distant nerves—to the most distant; in fact, the whole system is united together. We cannot unravel the entangled and matted fibres, but we have a clue to the nature and the design, and, I would almost say, the simple arrangement of the whole.

The Sensitive Fibrils.—The nerves of sensation ramify into branches of extreme minuteness. It was necessary that they should do so—that they should spread themselves everywhere, in order that there might not be the minutest part of the frame in which they did not give warning of danger or injury. Their anastomoses, probably, are few; for it was necessary that the impression should be referrible to the precise spot on which it was made; nor would it be consistent with the enjoyment of the animal, that any painful feeling should spread around, unless when the injury is extending and needs instant remedy. Yet we can conceive of minute fibrils of inter-communication between the sensitive nerves, in order to keep up a common feeling

and sympathy of parts, and on which, in truth, not only the well-being of the system, but the proper action of every part depends.

The Motor Fibrils.—I can form a clearer conception of the anastomoses of the motor nerves. There is scarcely an action of the simplest nature that can be performed by the power of a single muscle. Many muscles must work together, and many nerves combine their influence, in order to its accomplishment. For the more perfect performance of this, and to secure the consentaneous action of these muscles, the fibrils of the nerves by which they are supplied are brought together, and have inter-communication with each other. A certain nerve is not only given to a certain muscle and there results only one contraction or action of that muscle, but the nerve spreads over the muscle, and enters into, and is diffused over, the substance of it; and, according to the part or division of the muscle on which its principal or only influence is bestowed, the action is evidently and considerably varied. I can conceive, therefore, the necessity of the anastomoses of minute branches, in order that, by the co-operation of parts of various muscles, many complicated motions may be effected. He who has a perfect knowledge of the anatomy and function of the muscles, could without much difficulty trace out any seemingly complicated arrangement of nervous fibrils. But we shall have other nerves by-and-by with which to associate those of sensation and voluntary motion, and which will enable us more satisfactorily to account for the intricacy of their course.

Comparative Survey of the Cervical Nerves.—I return to the nerves of the neck, and I find no material difference in any of our patients, except that the three first nerves are proportionally larger in the dog than in the horse, because they have comparatively bulkier and more powerful muscles to supply, and which are so placed as to act with greater mechanical disadvantage than in the horse. In the ox they are rather less developed than in the horse, for the neck is shorter, although the muscles are large. The number of pairs, namely eight, is the same in all of them, considering the suboccipital as the first. In our occasional patients—the domestic poultry—the number is greater, and varies in the different species: the common fowl has 14 cervical nerves, the duck 15, and the goose 16. The parrot, respecting which we are sometimes consulted, has 12, and so has the lark, the goldfinch, and the canary, and most of our imprisoned warblers; and in all of them the nerves are proportionally larger than in quadrupeds.

The Nerves of the Fore Extremities.—The sixth, seventh, and eighth cervical nerves, and the first dorsal, not only supply the

muscles in their respective neighbourhoods, but a small branch of the sixth, and the greater portion of the three others, go to form a singularly complicated plexus of nerves, whence proceed branches to the external thoracic muscles, the scapula, and the whole of the fore extremity. The *external thoracic* nerve in the horse supplies the muscles of the breast and side, and even goes to the serratus and the latissimus dorsi, and the panniculus carnosus. The *scapular* ramifies on the muscles on the outer and inner side of the scapula, giving branches to the triceps, the teres minor, and the levator humeri. The *external cutaneous* nerve of the human being is not found, but the *spiral*, or rather a branch from it, and not from the *ulnar* as asserted by Cuvier, supplies the place of it; while the *spiral*, and the *radial*, bestow nervous influence on the upper part of the extremity, and the *ulnar* on the whole of it, and with no other difference than occurs from the one phalanx of the horse, the two which constitute the foot of the ox, and the four that are found in that of the dog.

The Principle of Neurotomy.—In the metacarpal and the plantar nerves of the horse, the ox, and the sheep, we have an interesting illustration of the distribution of the filaments of different function, of which the compound spinal nerve is composed. There are no muscles below the knee in these animals, and as it seems to be a law of nature that nothing is given which is not required, we imagine that the motor fibrils cease to exist below the knee, for there they would be useless; and accordingly, in the operation of neurotomy, we destroy the sensibility of the foot, and relieve a noble animal from that torture which in various diseases of the foot our own ill management or barbarous usage had inflicted upon him; but we take away no muscular power, and no otherwise interfere with the action of the limb, than by giving some incertitude of motion and increase of concussion, which must plainly be the consequence of the loss of sensibility in the part.

The Nerves of the Wing in Birds.—These spring from the last cervical and the two first dorsal nerves. The plexus is more regular and compact than in the quadruped. The pectorals, as may be imagined when we observe the muscles of the breast in the bird, are of great comparative bulk, and there are four of them. Two nervous chords only are sent to the wing; the first, taking its course under the inferior surface of the wing, answers to the *spiral* and the *ulnar* nerves; the other, turning round the humerus to reach the superior surface, is the *radial* nerve.

The Dorsal Nerves.—We have observed the spinal chord enlarging at the inferior part of the neck, that the nerves which are to form the humeral plexus may be sufficiently developed.

It now rapidly diminishes, and becomes little more than a round chord; but still a succession of nerves from above and below are given out from it, opposite to each of the articulations of the spine, yet with this singular circumstance, not existing however to so great an extent in the brute as in the human being, that while the origins of the cervical nerves are opposite to the foramina through which they escape, the posterior dorsal and the lumbar nerves spring from portions of the spinal chord anterior to these foramina, and increasingly so, and therefore they run a certain way along the side of the spinal chord, before they escape from the canal. Do they thus receive any minute filaments or influence from the lateral columns of the spinal chord? This is worth observation and inquiry.

The Intercostals.—There are eighteen pairs of dorsal nerves. They are smaller than the cervical nerves, and present fewer anastomoses, and even fewer ramifications; for there is less muscular substance to supply, and far less muscular action. Each dorsal nerve, as it escapes, divides into two branches. The inferior one, after giving a branch to the panniculus carnosus, and to the integument, shelters itself with the bloodvessels in a sulcus under the posterior edge of the rib behind which it escapes from the spinal canal: as it passes, it gives minute ramifications to the muscle between that and the next rib, and then, in the anterior ribs, expands itself on the muscles of the sternum; while the nerves of the posterior ribs, after supplying the intercostal muscles, send their ultimate fibrils to the internal oblique and recti-abdominal muscles. These are plainly respiratory nerves, and we shall have reason to suspect that they proceed from, although they have not been actually traced to, the lateral column of the spinal chord. At all events, each intercostal nerve anastomoses with the great organic, and forms with it a ganglion.

The superior branch of the nerve turns upwards, becomes deeply buried in the muscles of the back, and gives filaments to the serrati, the rhomboides, the trapezius, the latissimus dorsi, the quadratus, the psoas magnus, the iliacus internus, the superior abdominal muscles, and, in fact, all the muscles of the back and loins.

Comparative View of the Dorsal Nerves.—The only important difference in the dorsal nerves of other domesticated animals is in their number, and that corresponding with the number of the ribs. In the ox, the sheep, and the dog, there are but thirteen; there are fourteen in the hog; and in the bird they seldom exceed seven or eight.

The Lumbar Nerves.—There are five lumbar vertebræ, and a corresponding number of nerves. The spinal chord is now be-

ginning to enlarge. About the third lumbar vertebra the increase of size is very evident. These nerves, as soon as they escape from the canal, divide also into a superior and inferior branch; the first going to the muscles of the loins, while the inferior one, as I shall have to shew you when describing the muscles, is of great consequence. The inferior branch of the first lumbar nerve takes a long course over the transverse processes of the two next vertebræ to the iliacus, and along the muscles of the thigh, almost to the stifle. It has also, in common with every nerve of the spine, communications with the nerves next before and behind, and with the great organic nerve.

The second lumbar nerve is of more importance. It not only gives ramifications to the psoas and the iliacus, and extending even to the stifle, becomes the principal subcutaneous nerve of the thigh, but, passing through the abdominal ring, it dispenses nervous influence to the scrotum and testicle of the male, and the uterus, the pudenda, and the udder of the female. It even does more than this; it helps to form one of the nerves of the hind extremity. Of these, then, I must next speak; but it will be a hasty glance indeed that I can now take of them.

The Nerves of the Hind Extremity.—These do not arise from one common nervous plexus as in the anterior extremity, and the branches that issue from which it is difficult or impossible to trace to their true nervous origin, but the formation of the nervous chords can be satisfactorily followed to distinct plexuses, referrible to particular nerves.

The second lumbar nerve contributes a branch, and the third and fourth the greater part of their substance; and the fifth a considerable branch, to the formation of the *crural* nerve. Its principal distribution is to the rectus, and to the internal and external vastus; while no mean branches go to the iliacus, and the psoas magnus, and the pectineus, and then, becoming a subcutaneous nerve, it ramifies on the interior and forepart of the thigh and the leg, and may be traced as low as the fetlock. It accompanies the vena saphena in the greater part of its course, and should be remembered when we are bleeding from that vein.

The third lumbar nerve sends a branch to form the *obturator;* the fourth more largely contributes, and a smaller branch is derived from the fifth. This nerve, after a short course, passes through the foramen magnum ischii, gives branches to the obturator muscle, to the pectineus, the triceps, and the gracilis.

The fifth lumbar nerve detaches a branch to help to form the *sciatic* nerve; it receives a much larger one from the first sacral, and others from the second and third. This nerve quits the pelvis through the sacrosciatic ligament, passes between the

hip-joint and the tuberosity of the ischium, enters deeply into the haunch ; and having given branches to the biceps, the semitendinosus and the semimembranosus, divides into the three *popliteals*. The first of these answers to the ulnar nerve of the fore extremity; the second feeds the gastrocnemii, the flexors of the foot, and reaches to the stifle-joint; and the third, after sending branches to the semimembranosus, the gastrocnemius externus, the flexor metatarsi, and the extensor pedis, pursues its way down the leg, and becomes at length a subcutaneous nerve, terminating on the pastern.

The fifth lumbar nerve sends a considerable branch to help to form the *gluteal;* but the main substance of it is derived from the first sacral. It is expended on the glutæus maximus.

I have no material difference to point out in the distribution or function of the lumbar nerves in our other domesticated quadrupeds.

The Sacral Nerves.—Besides contributing to form the sciatic and gluteal nerves, the first of the sacral nerves anastomoses with the second lumbar. The *second* ramifies posteriorly among the muscles of the tail; the *third* gives branches to the muscles of the haunch; the *fourth* supplies the bladder, and rectum, and perinæum; and the *fifth* belongs to the muscles of the tail. All these are composed of branches of the inferior divisions of the sacral nerves, and which likewise communicate with the great organic nerve, and with the lumbar nerves. The superior divisions, as in the dorsal and lumbar nerves, supply the dense mass of muscle above, or penetrate through it, and become subcutaneous nerves.

The Cauda Equina.—The spinal chord had begun rapidly to diminish at the last lumbar vertebra; and at the second of the sacral bones it may be said to end. We can trace a little pyramidical point in the centre which is its apparent termination. This bulb, however, is surrounded by numerous nervous chords, forming at first a bundle of prolongations or large filaments more bulky than the chord from which they sprung, but gradually diminishing in size and in number, and ceasing altogether about the fourth caudal vertebra. The three last sacral nerves are formed from these chords, which, like those from the spinal marrow itself, are perfect nerves of sensation and voluntary motion. The sacral nerves, however, issue by two distinct foramina from the spinal canal; the superior penetrate at once into the muscles above; the inferior escape into the pelvis; but they are not nerves of different character or function, for after the motor portion had joined the sensitive, and the compound nerve was formed, the

first division took place *within the canal*, and both branches as they issued were true compound nerves.

The Coccygeal or Caudal Nerves.—There are four other pairs of nerves proceeding from these chords, and which escape from the four first vertebræ of the tail. They are also compound nerves of sensation and voluntary motion: they anastomose with each other, and keep up the chain of nervous intercommunication; but they have no connexion with the great organic which has here ceased to exist. They likewise divide into a superior and inferior branch; the superior connected with the erector, and the inferior with the depressor muscles of the tail, and both of them being also subcutaneous nerves.

And so ends our anatomical description of the spinal marrow,—brief, dry, and somewhat unsatisfactory; but we should hereafter have had much repetition, if I had at present more fully traced the course of the different nerves. We are now prepared to return to the commencement of the spinal chord, and enter into the consideration of its lateral column; but this deserves a separate lecture.

ON CATARACT IN THE EYE OF THE HORSE.

By Mr. W. C. Spooner, *V.S., Winchester.*

In the last January number of The Veterinarian there appears a very interesting paper on a most important subject, viz. the formation of cataract; and I think it behoves every one who has any thing to offer that can possibly throw light on the subject, to lay it before his professional brethren; for it must be extremely desirable, that the jarring opinions of veterinarians should be in a measure reconciled; and those strange contrarieties and differences of opinion that a horse trial too frequently elicits, should be as much as possible avoided. However, the greatest errors, and the most unpleasant differences, often act as incentives to inquiry, and stepping-stones to knowledge; and the trial in question, which has furnished subjects for Mr. Cartwright's remarks, has not been deficient in affording these desiderata.

The facts brought forward by Mr. Cartwright and by Mr. Perry in the last number, I think, sets one question at rest, viz. *that cataract may and does occur independently of previous active inflammation;* but although (this being the case) the opinions expressed by several veterinarians on the trial must consequently

be incorrect, yet I cannot agree with Mr. Cartwright in considering that the verdict of the jury was, on the whole, erroneous.

It will, I imagine, be generally acknowledged, that the existence of cataract, be it great or small, constitutes unsoundness. If we do not agree in this, we shall involve ourselves in a mire of difficulties and disputes; for though it may not appear to impede vision, yet who can say that the opacity will not increase; that it positively was not preceded by inflammation; or that it will not, in the course of time, produce blindness? The safety of the animal affords no guiding rule; for many a one-eyed horse makes a clever hunter, and a half-blind hack is often a safer roadster than many others, who, with every appearance of possessing perfect eyes, start at every object they meet. The smallest opacity on the lens must act in opposing the entrance of rays of light; and even if, from its appearance, we could ascertain that it would certainly become absorbed, it would, I conceive, be time enough to pronounce the horse sound when this absorption has taken place.

Mr. Cartwright says that a cataract may take place in a month: this I believe; for I have known it occur in less time. Mr. Clay avers the same: but he does not say, nor do any of the cases shew, that it can be produced in this short period without acute inflammation: and there is no evidence brought forward on the trial to shew that the horse had any inflammation in his eyes between the period he was sold and the day he was examined by Mr. Hickman. Then again, no one imagines that when cataract occurs as the sequel of active inflammation, it ever becomes absorbed: if, then, the opacity subsequently disappeared in Mr. Croft's horse, as Mr. Cartwright states, it shews that it was not produced by ophthalmia; and therefore I see no grounds for supposing, and I do not believe, *that the horse was free from cataract when sold.*

I certainly cannot admire Mr. Hickman's letter, as copied from the Shrewsbury Chronicle; for it is by no means creditable to the profession, that the opinion of Nimrod should be put on a par with that of the Professor's, on a surgical case; or that the reply of any non-professional man should be considered to set at rest a dispute on a veterinary subject. But I cannot help being much pleased with Mr. Apperley's answer; for though Mr. H. would make him an oracle, he assumes to himself no empiricism whatever, but states his opinions candidly, and with no undue positivity; and mentions the facts that have mainly assisted in forming them. I think that Nimrod's replies to the three queries put to him are perfectly correct; it is the opinion he expresses as his "*idea of a cataract*," that Messrs. Cartwright and Perry's cases shew to be incorrect.

The forms and duration of ophthalmia, the frequency of its attacks, and the degree of disorganization produced by each attack, are extremely uncertain and dissimilar, which the following cases, perhaps, will assist in illustrating:—

CASE I.

A brown mare was worked in a coach at four years old till she was seven, when she had a violent attack of ophthalmia; and though depletion was had recourse to, and the inflammation was subdued in about ten days, a cataract was left in both eyes, and total blindness in one: a second attack some time afterwards entirely destroyed vision.

CASE II.

A bay mare was bought at six years old, and soon afterwards she became affected with ophthalmia, to which she, no doubt, had before been subject. Periodical attacks occurred every four or six weeks; and whilst she was affected with it, she would frequently (on any one approaching her head) hang back, and break her halter, and sometimes fall over on her back. In the course of two years, the interval between the attacks became longer, and continued to increase in duration; and when she died last year (of an affection of the brain), which was eight years after I first knew her, though lame and worn out, she was not totally blind.

The two next cases will, in some measure, corroborate Mr. Cartwright's remarks.

CASE III.

A four-years old horse was bought two years and a half since, when I discovered small cataracts in each eye. I rode him, and though he did not shy, he would blunder against a rail or a gate. He was put to fast work in a mail, where he still continues, and he has had no inflammation in his eyes since; and when I saw him last, a few months ago, the cataracts were much the same.

CASE IV.

Some time since I was requested to examine a horse that was lame, when I perceived a cataract in one eye. The owner, a surgeon, said he had had no inflammatory attack during the three months he had been in his possession; and the previous possessor denied any thing being the matter with his eyes before.

I have met with several instances of blind horses being subject to attacks of inflammation of the eyes, during which time

their general health appeared to be somewhat affected, and the eyes became still further disorganized.

I hope the above subject will not be allowed to drop until it has engaged the attention its importance merits; and I trust that other veterinarians, of greater experience and more extended practice, may be induced to favour the profession with the result of their observations.

ON THE FORMATION OF CATARACT IN THE EYE OF THE HORSE.

By CHARLES JAMES APPERLY, *Esq., Author of Nimrod's Letters.*

ALTHOUGH I see little of the treatment of the horse in this country (France) but what disgusts me, I like to hear what is going on with him in my own; so being in London in January, I purchased the six last numbers of THE VETERINARIAN, in one of which I find the Shrewsbury cataract case reported, with a copy of my letter to Mr. Hickman, V.S. of that town, annexed. It appears that my answer, "*Certainly not*," to the question, "Do cataracts appear in the eye of a horse suddenly, without the eye having been first in a state of inflammation?" required some qualification; although, being backed by Mr. Percivall, who thinks it possible, but never saw it, I get out of the scrape pretty well. To my other answers there appear no objections.

Now, as to a cataract being one week in a horse's eye and the next out of it, I cannot dispute the fact on the *ocular* demonstration of Mr. Cartwright; and it seems he has seen more than one instance of it. It is certainly a novelty to me; but these are the days of novelties; and I will only add a hope that, as absorption of cataract does take place of itself, the veterinary art may devise some means to promote it. The author of "The Horse," in the Farmers' Series, says, "Cataract admits of no remedy."

I have read Mr. Percivall's beautifully scientific lectures on the eye and its diseases until I have fancied I had a cataract in my own eye; but they have convinced me of two material facts—first, that it is very difficult to form a correct judgment of a horse's eye, even with those who have made it their study; and, secondly, that unless cataract be the effect of inflammation (see page 226, Lecture on Cataract), it takes even a cleverer fellow—if you can find him—than Mr. Percivall to find out any other cause; and I quite agree with Mr. Cartwright, that Nim-

rod's opinion is not only not so good as Mr. Coleman's, but that on so very difficult a subject as cataract, it is worth very little. With the exception of the bold assertion, "Certainly not," it merely had reference to what had happened in his own stable, and the result of his observation in others.

When I stated, in my answer to Mr. Hickman, that I had only three cases of cataract, I alluded to such as had occurred to horses during my possession of them. I will now state two more, that do not come under that head. I gave the late Richard Bayzaud, Esq. a gentleman well known to all sportsmen, 220 guineas for a hunter, and, as may be supposed, one very perfect in his business. After having him some time, and riding him in all countries, I observed, as I was sheltering in an outbuilding which cast a favourable light on his off-eye, that there was a deeply-seated cataract in it. I am certain Mr. Bayzaud knew nothing of it, neither should I have seen it but for the accidental circumstance. To what extent he could see with that eye I cannot speak, but he blinked it on the approach of the hand or a stick.

I sold him to General Broadhead for 280 guineas; and he was afterwards ridden by a first-rate Oxfordshire sportsman, but nothing was ever said or heard of the cataract.—This reminds me of another case:—I purchased a mare by Walton out of Highland Lass (see Stud Book), bred by Mr. Powell, for a small sum, because she had "pearls in her eyes." I rode her, hack and hunter, three years, or more. She was given to start, and particularly at any thing on the ground, *just in her track;* but she was an admirable cover hack, and a tolerable fencer. This mare is now in Shropshire; for I lent her to a nephew, a sailor weighing 13 stone, who broke her down, by leaping into a lane, off a bank, half-mast high, with Sir Richard Puleston's hounds. Mr. Mytton gave me a trifle for her, and she was sold at one of his sales, in foal to Master Henry. These cases made me look very minutely into horses' eyes ever after for cataract; and I was the means of preventing two very good sportsmen—the well-known Mr. Bunce, one of them—purchasing horses that were thus affected. But, gentlemen, excuse my ignorance—do cataracts exist without accompanying blindness? and is there any intermediate defect, known by the term "pearl?"

I have not leisure at present, or I would report a case of an unsound horse I once had the misfortune to purchase, and the reason why I could not recover the price of him. I may do it another time, if I thought it would be agreeable to yourselves and the profession, for whom I entertain a high regard. Your no-

tice of my Letters on the Condition of Hunters was highly flattering; but more so than they deserved*.

A CASE OF TETANUS, PRECEDED BY UNUSUAL SYMPTOMS, AND SUCCESSFULLY TREATED.

By Mr. J. GWYNNE, *V.S., Welshpool.*

ON the evening of August 22, 1833, I was suddenly called to a brown horse, the property of a gentleman in this neighbourhood, who, in the breaking him in for harness, ran away, upsetting the vehicle, and from the fall and the injury received was unable to rise. In this condition I found him. He had lost the use of his hind extremities, and when raised up by a number of men, was unable to stand. I immediately bled him freely, which in a short time seemed to relieve him a little; but in attempting to remove him he nearly fell. The owner, being present, was very anxious that he should be destroyed; but I prevailed upon him to leave the horse under my care. My first object was to have him removed to the nearest stable that could be obtained. While consulting which would be the best way to convey him thither, the horse endeavoured to move himself forward, which, with the help of two strong men who supported his hind parts, he accomplished. In this way he reached the stable. On a further examination, I found he had received extensive injury of the head and surrounding parts. I again opened the vein and bled him until he became faint, and in the course of the evening gave him aloes ʒiij, digitalis ʒij, nitre ʒiij, in a ball; bandaged his legs; ordered a bran mash, &c., and left him under the care of a servant for the night.

23*d*.—I find him this morning able to use his hind legs, but he has lost all controul of the near fore-leg, which is thrown about in a circuitous manner; his eye upon the same side has a glassy appearance, and the sight nearly gone; pulse 60. In repeating the ball I find a stiffness of the jaw, and upon examination of the

* We cannot allow that our critique on the Letters on the Condition of Hunters was more favourable than the work deserved. There are few of our readers who have not perused them with much pleasure, and improvement too. We shall at all times be most happy to hear from the author of Nimrod's Letters. The opinions of so accurate an observer of the horse must always be entitled to attention, and will not often be wide from the truth; and to know that such a man entertains "a high regard" for our profession, is gratifying to us.—EDIT.

muscles of the neck, I considered them a little rigid. Having a patient to attend some distance off, I did not see him again until 5 P.M., when his jaws were nearly closed, his tail erect; in a word, every symptom of *tetanus* had appeared. I immediately applied a blister (composed of infusion of cantharides and mustard) to the head and neck, and with great difficulty gave aloes ʒiv, nitre ʒiij, in a ball.

24*th*.—I find him much the same. Repeat the blister, and the ball in solution.—4 P. M., the medicine has began to operate, but the horse is rather worse; on moving he evinces a great deal of pain.

25*th*.—Medicine operating, but no better. Apply the blister as before. In the course of the evening he drank a little gruel, and felt inclined to eat a little hay, but could not.

26*th*.—The horse better; eats a little grass, and drinks the gruel. The blister and ball repeated, as the physic was setting.

27*th*.—Much the same. The blister and ball repeated. The same treatment was repeated for the two following days, with slight advantage.

30*th*.—This morning, in walking him out, the fore and hind legs of the near side are thrown in a circuitous manner; but hs sight is restored and the jaws relaxed. Treatment as before.

31*st*.—Horse a little better. The blister dressed with mild digestive ointment, and ball repeated.

Sept. 1*st* to 3*d*.—Similar treatment continued, when the horse was so much better, that upon the 4th he was able to walk home, the distance of three miles, and was turned out to grass; and in the course of a month was sold to a respectable farmer of this neighbourhood, who rode him in the two following days 100 miles. He has him still in his possession, and has hunted him several times this last season.

ON WORM IN THE EYE OF THE HORSE.

By Mr. G. SKEAVINGTON, *V. S., Devonport, late V.S. to the Bengal Horse Artillery.*

THIS is, I believe, a disease wholly peculiar to India, for, previous to my going to that country, I never heard of it; but from reading the valuable lectures of Mr. William Percivall, I did, while in India, inquire of several Arab merchants respecting the disease in Arabia: the disease however is not known either in

Arabia or Persia. At page 234, vol. iii, of those lectures, Mr. W. Percivall quotes a passage from a letter on the subject, written by Mr. Charles Percivall, then veterinary surgeon of the 11th Light Dragoons. Mr. P. thus expresses himself: "In low, humid situations in India, where fogs are prevalent, or where there is stagnant water, especially after an unusually wet season, worm in the eye is a very common occurrence." Now, Mr. C. P. was stationed much further up the country than I ever was, although I will grant with him there are low situations in all parts of India, from the general flatness of the country, and fogs, and those so dense, that I have known the sun to rise in the month of January as bright and clear as it ever rose, but by 7 A. M. I have been obliged to alight from my buggy, and, by giving my groom one end of the whip, and holding the other in my hand, grope along the road as well as we could to find our way—I holding the horse by the head, he by the side of the road, to prevent our falling into the ditches, which are on either side of the road about six feet deep, at the station I was at (Dum Dum). I cannot see how the humid atmosphere, the low situation, the fog, the wet, or the cold can produce worm in the eye; and this because the horses of India are not turned out to grass as in England. There are no out-door pastures in India; horses are always kept at stable. They are fed with grass, it is true; but you employ a man on purpose to cut a given quantity daily, which he does with a small hand hoe, at every stroke pushing from him—shaving the grass, as it were, off the ground, as close as he possibly can; and this not in an open field, but by the side of a road, or where it is much trodden, for the common grass the horse will not eat. It is what is called, in the native language, the Dh,ooss grass; it is an extremely fine fibrous grass branching out in every direction: the leaf very much resembles flax. All horses are very fond of this grass. Now, this grass grows where the ground is most trodden; the same as you see in England, that fine sweet clover invariably grows at the edges of a pathway through a field, though, perhaps, not a leaf of clover is in the whole field beside. Well, when the grass-cutter has procured as much as will serve for the 24 hours' consumption, he carries his burden home to the stable, where it remains, probably most of it, until the morrow, before the horse has it given to him, because the grass-cutter frequently has several miles to go for good grass, and more especially in the rainy season; consequently he does not return till 3 or 4 o'clock P. M. The grass he then brings home will have to serve the horse until the morrow at the same hour (Blackey always making up his mind to bring no more home than the horse will consume in one day);

consequently it remains in the house so long before using, that it is partially dried, militating, I take it, greatly against the life of the worm, if there should be any; also its situation would be rather unpleasant when in contact with the molar teeth of the horse. Again, I think, worms that would be taken in with food would not live long, or be too large to pass into the minute absorbent vessels. Besides, the stomach and intestines of the horse appear to be the natural situation of worms. Bots are carried to the stomach in the shape of ovula: and why not ascarides as animalculæ in the water? as I believe this to be the case. I do not think worm in the eye arises from situation at all, or from wet, &c.

Now, gentlemen, it is only fair that I should give you my opinion of what I think is the cause. And, first, I must tell you, we have no pumps in India; consequently all supplies of water you receive is from immense ponds or tanks, as they are called. Sometimes you meet with a spot of ground where a spring is situated; but nine out of ten of the tanks have no such thing, but are so large, that from the deluge of rain that falls from June to October they are filled, this serving for the year's consumption, or until the rainy season commences again; although this is not always the case, for I recollect, in the hot season of the year 1831, all the tanks were nearly dried up. Now, the water from these tanks or ponds is supplied to both man and beast; and as we all know that water is pretty well stocked with animalculæ, my opinion is, the worm is taken up at the time of drinking, in so minute a form, that it is capable of being absorbed, and passing into various parts of the body. I have, in the course of my anatomical studies, found worms in almost all the passages: I recollect once finding an immense quantity in the trachea of an ass, and in the extremities of the bronchial tubes. This induced me, with Mr. H., who, I believe, is practising in the neighbourhood of Sheffield, to examine the whole length of the intestines; and on cutting open the cæcum and colon, but more especially the cæcum, we found what we thought small tumours; they were about the size of half a pea, but on cutting them open a worm of the ascarides kind constituted the contents: the rectum was studded all over with them, some smaller, more like dust shot, but white. Now, we very well know, that the stomach of the horse cannot contain the great quantity of water he drinks at one time; but that it passes rapidly on to the cæcum, and there remains until absorbed, or the greater part of it. Therefore, I think this, in a great measure, elucidates how the worm may get into any of the vessels of the system, as great absorption is always going on from the cæcum.

However, as I have given you my opinion candidly, I trust, if I am wrong, some of your valuable correspondents will put me right. I will now, if you please, relate a case or two which occurred in my practice, because they are not very common.

CASE I.

In the month of March 1830, my attention was called to a brown country-bred horse, as I was walking through the lines inspecting the troop horses in stable. On examining the horse's eye I found considerable opacity of the cornea; and I fancied I could see a worm floating about the anterior chamber; but not being certain, I had the horse removed to the hospital, and bled 8 pounds, and the eye constantly kept wet with diluted liq. plum. acet. On the morrow morning the opacity was considerably removed, and I had a full view of the enemy. I did not hesitate a moment then, but at once proceeded to extract the worm, which I did with a common abscess lancet, about the middle size, first guarding it with a skein of tow, so that about three-eighths of an inch of the blade projected. I simply had the horse secured with a twitch, preferring to perform the operation on the horse standing, though I have heard of some veterinarians casting the animal. I then waited for a favourable opportunity of the eyelids separating for puncturing the cornea, this being sometimes very tedious, so much inflammation and consequent irritation going on in the eye and its appendages. After a little patience I made a puncture nearly in the middle of the cornea, when out came the aqueous humour, and with it the worm on to the back of my left hand. I deposited the little fellow in a bottle for future examination. I then ordered the horse aloes ʒv, tereb. vul. ʒij, and continued the lotion for about a week: the medicine operated well, but the eye did not get clear so fast as I imagined it would. I therefore changed the lotion for a weak solution of sulph. zinc. and gave an alterative twice a-week for three weeks longer, when the horse was discharged, free from any opacity, with the exception of a small hair line occasioned by the puncture: but in the course of three months this entirely disappeared.

I examined the worm as well as I could with the naked eye, not having an opportunity of procuring a glass. The worm was nearly an inch and three-eighths in length, with a black speck at both ends, but which was head or tail I really cannot tell. Its size was about that of the middling-sized sewing cotton.

CASE II.

In the month of May 1830, one of the farriers reported a chesnut horse as having worm in the eye. I had the horse to the

hospital, and sure enough the worm was there, quite plain. But there was, in this case, only slight opacity of the cornea, and the worm distinctly to be seen. However, I did not operate, for I had been so unwell for the previous fortnight, that, in truth, I was not able. This worm had a marked difference in its appearance to any I had seen before. It was flat, the same length as usual, but the edges were fringed or saw-like: whether this arose from an unhealthy state of the worm I do not know, but imagine it did. On the morrow I did not visit the hospital at all. The farrier came to my house, and reported the horse's eye much the same. I ordered the horse an alterative bolus, and visited the hospital on the following morning, and, to my utter astonishment, saw the worm at the bottom of the anterior chamber, dead. I immediately ordered the horse on bran mashes, and gave him a mild dose of physic, which operated well. As I was too unwell to attend to my duty, I did not see the horse for three weeks, when the worm and all the opacity were completely removed. The horse had been treated with alterative medicine twice a-week after the setting of his physic.

CASE III.

I was called in by Major T., of the artillery at Dum Dum, in the month of September 1831, to examine his grey charger, which, as the groom reported, had his eye bad. I found this horse had worm in the near eye. I had the horse brought to my own stables, and immediately operated as in the first case, which did well. But the eye was not clear at the end of a month. The Major was very anxious to have the horse home, as the practice season (November) was coming on apace; however, in two months after, the horse was perfectly free from any blemish.

Now, why I send you this case is, its peculiarity; for, in the month of September 1832, I was again called in to the same horse, with worm in the off eye. In this case I proceeded as before; the horse got well, and the eye completely clear in three weeks.

I have selected these three cases out of eleven which occurred to me in my practice during my stay in India. I will now tell you why I punctured the eye in the centre instead of keeping as near to the sclerotic coat as I could; and that is, if you puncture as near the centre as you can, you are not in danger of wounding the iris. I have also seen several horses which have been operated on for the removal of worm in the eye; but I noticed, particularly, that whenever the puncture was made near the edge of the cornea, there was an opacity left to a greater or less degree.

With reference to worm in the eye occasioning what is called "kummeree," or weakness in the loins, I think worm in the eye has as much to do with "kummeree," as it would have with the navicular disease. I see Mr. Charles Percivall states, in his letter which I have before referred to, and what seems to me very remarkable, that these horses (horses with worm in the eye) are frequently affected at the same time with what the Indians call "kummeree." Now, as far as I have seen, I never knew a case of weakness in the loins occasioned by worm in the eye, or *vice versâ*.

With reference to kummeree, I shall reserve what I have to say on that subject for a future period.

CASE OF LITHOTOMY IN THE HORSE.

By Mr. C. TAYLOR, *V.S. Nottingham.*

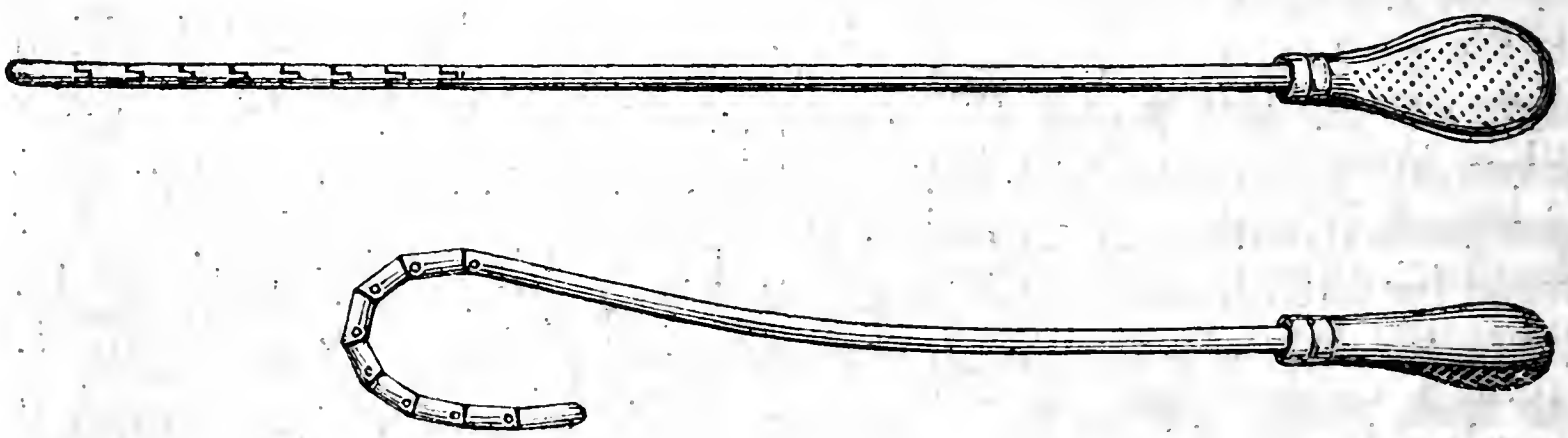
THIS case was operated upon April 1, 1833, and in which I was assisted by Mr. Wm. Wright, Surgeon. It was a chesnut, six years old, fifteen hands three inches high, and a good hunter.

I had been called upon, about two months before, to attend him. He then belonged to Mr. Wm. Wright, who appeared to be very much interested about the case. The horse passed bloody urine, with frequent attempts to evacuate the bladder, and which took place almost invariably after exercise, and more so after quick exertion. I at first treated him under the impression that he had a rupture of a capillary vessel of the kidneys; and, after bleeding, opening the bowels, &c., I gave him daily astringents, combined with small doses of opium; but with no good effect. From a continuance of the symptoms, I was led to suspect a calculus in the bladder, and, upon examination by the rectum, I discovered a solid body about the size of a pullet's egg within the bladder, near its neck, and which was moveable. I examined him twice or thrice, at different periods, and was satisfied in my own mind, as much as I could be (without passing a sound), of the real nature of the case.

Having never read or heard of any instrument being used for that purpose in the horse, I turned my attention to this object, and first tried one (upon a dead subject) made of polished round iron, three feet long, exclusive of the handle, one and a quarter inch in circumference, and curved six inches at the extreme end, and which I was enabled to pass along the urethra as far as the symphysis pubis, but no further.

I next tried one of the same size made of hollow lead, to give it more flexibility, which I could pass into the bladder by placing my left hand at the perinæum, and giving it the necessary curve, but could not withdraw it without much difficulty and risk of lacerating the urethra.

The idea crossed my mind, that a sound made with joints would be practicable to pass into the bladder, and also be withdrawn with facility. I had one made as thus:—It was of polished round iron, three feet long, one and a half inch in circumference, with eight joints at its further extremity. The solid part between each joint was one and a quarter inch in length and one and a half inch in circumference; the moveable part being ten inches, and the solid part two feet two inches, which had a slight curve, commencing one foot from the handle and continuing to the first joint of the moveable part, to give it facility to pass the urethra in that part where it is attached to the parietes of the abdomen. The joints were upon the principle of a half-joint, so that the moveable part would only act in a straight line and curve in one direction: they were perfectly smooth and rounded when acting either in a straight line or curve. I tried this instrument upon a dead subject, and it passed the whole length of the urethra under the arch of the pubis with perfect facility, directly into the bladder, and was as easily withdrawn. It is represented in its straight and curved state in the following cut.



Having attained thus far, the operation was decided upon and conducted as follows:—

April 1*st*, 1833, 9 A.M.—The horse (having been previously prepared with physic and bran diet) was cast, and secured on his back as for castration, with both hind legs drawn up to the shoulders, and bolstered in that situation by two half sacks of corn firmly tied up. Having the penis drawn from the sheath by an assistant (the rectum being previously emptied), I endeavoured to inject the bladder with warm water, but was only enabled to distend the urethra, from the resisting contraction of the sphincter. I then passed my jointed sound into the bladder, and, having given it to an assistant to hold, pushed my hand into

the rectum, and brought the body in the bladder into contact with it, and the assistant was satisfied it was a stone which struck the end of the sound. Continuing this instrument in the bladder held by an assistant, I placed the fingers of my left hand upon the perinæum, opposite the symphysis pubis, and, drawing the integuments up, kept the parts tense.

I then commenced the external incision immediately below the arch of the pubis, close on the left of the raphe, and continued it down obliquely by the side of the anus, making the external wound three and a half inches in length. I then divided the fascia and transversales perinæi muscles, and introduced the fore finger of my left hand into the wound, and distinctly felt the pudic artery where it enters the bulb. I kept my finger upon it, and carried on my deeper incision below it laterally down by the side of the rectum, through the connecting cellular texture, occasionally feeling for the sound in the urethra, which I cut down upon in its membranous part beyond the bulb, and with some little difficulty, which I apprehended was in consequence of the jointed sound being moveable: a straight fluted staff was then introduced into the bladder, through the opening in the urethra, and the calculus again distinctly felt and heard on being struck. The sound was withdrawn, the forceps introduced, and the stone attempted to be extracted, supposing from its size, compared with the dilatability of the neck of the bladder, that it might be extracted without division of the neck; but that not being practicable on account of the sphincter forcibly contracting, the fore finger of the left hand was introduced into the bladder, which served as a director to a long probe-pointed bistoury, which was then passed within the neck of the bladder, and its division completed by withdrawing the bistoury, keeping the edge downwards and outwards in a line with the external wound. The calculus was then easily extracted. It was of the size of a small pullet's egg, rough on its surface, with a pungent urinary smell, sandy texture, being easily broken, and of a light nature, weighing not quite three ounces.

The hemorrhage was trifling, and I did not find it requisite to take up a single branch of the small arteries, which were necessarily divided. The bladder was washed out with warm water, by using a patent syringe, and two sutures were applied by the side of the anus connecting it with the common integuments. The horse was then allowed to get up, and, having stood a few minutes, was walked into a loose box, and had a bran mash, part of which he ate. Immediately after the operation, I gave him as a draught, tinct. opii ℥ss., aquæ lbss. He had no unfavourable symptoms, and did not appear exhausted or restless.

3 P.M.—Pulse accelerated, 48, full and hard. He was bled to four quarts. He passed his urine principally by the urethra, which I apprehend was in consequence of the wound being in a state of collapse. Diet, bran and linseed mashes, very little hay, and chilled water to drink. A groom sat up with him at night, and he was tied with a halter with two shanks at right and left angles, to prevent his rubbing and irritating the wound, by turning half round in the loose box, which he could have done without this precaution.

April 2d.—Pulse 42, full and soft; evacuates his urine (which is tinged with blood) partly by the wound and partly by the urethra; appetite good; bowels regular: no medicine necessary. He was loose in the box during the day, and a person again sat up with him at night; and he was tied as before.

3d.—Pulse 36, full and soft, bowels regular: suppuration establishing itself from the wound. I saw him evacuate his urine, which was principally with a gush from the wound, and it was tinged with blood; a portion of it was also passed by the urethra. He was loose in the box during the day; he has not yet lain down: was sat up with at night.

4th.—Pulse 36, full and soft; appetite good, bowels regular, healthy suppuration from the wound; evacuates his urine principally by the wound, but not tinged with blood: he appears cheerful, and there is no particular stiffness in his movements about the loose box. I have not found it necessary to give any opening medicine or clysters.

5th.—Pulse regular, appetite good. I had the parts surrounding the wound frequently bathed with tepid water, and sweet oil applied below, to prevent the suppurative and urinal discharge from excoriating. He lay down at night.

6th.—He had an inflammatory swelling on the left of the os sacrum and above the ischium, which was frequently fomented with warm water: all other symptoms favourable.

7th.—The swelling subsiding; evacuates his urine partly through the wound and partly by the urethra.

8th.—The swelling nearly dispersed and a similar one shewing itself on the right of the sacrum, which was frequently fomented. As there were not any symptoms of constitutional irritation, no medicine was given.

9th.—The left tumour dispersed, the right nearly so. I imagine they must have arisen from local irritation alone, the constitution not sympathizing.

10th.—All symptoms favourable; the wound granulating, and appears to be healed by the side of the rectum, where two sutures had been applied: evacuates his urine principally by the urethra.

11*th*.—But little suppuration. I applied the argentum nitratum lightly to the granulations and sides of the wound.

12*th*.—The wound very much contracted. I repeated the caustic lightly.

13*th*.—Repeated the caustic.

14*th*.—He was observed to evacuate about two quarts of urine by the urethra and none by the wound.

15*th*.—I observed that the horse has lost flesh about his quarters and loins, but all is going on well. He evacuates clear urine by the urethra and none by the wound, which is nearly healed, it being a fortnight to-day since he underwent the operation.

16*th to* 22*d*.—The caustic was daily lightly applied to the wound, which is now perfectly healed. He evacuates his urine at such intervals as horses in health usually do, has no symptoms of irritation in the bladder, and has no incontinence of urine.

23*d to* 27*th*.—Has daily walking exercise in hand.

28*th*.—Was rode a short distance into the country by his owner.

29*th*.—Discharged quite well.

May.—The horse was gradually taken into work as a hack, and occasionally used in harness : he was ridden, the latter end of this month, a distance of 45 miles with 16 stone upon his back, and did not experience the least inconvenience.

July 1*st*.—The horse continues quite well, and has been regularly worked up to the present time.

October 1*st*.—Continues well, has not had a single unfavourable symptom, and is now getting into hunting condition.

It is scarcely perceptible where the operation was performed.

March 1*st*, 1834.—The horse continues well, and is regularly used as a hack and hunter.

I consider that the successful result of the operation is mainly attributable to the opening in the urethra being made in its membranous part, and which could not well have been carried into effect without the jointed sound, which acted as a principal guide in the operation; and also the urethra not being laid open to any extent.

ON THE TORSION OF ARTERIES FOR THE PURPOSE OF ARRESTING HEMORRHAGE.

By W. B. Costello, *Esq.*, *London.*

[*Communicated to the Westminster Medical Society, Feb.* 8, 1834.]

It was originally my intention, in bringing the subject of the torsion of the arteries under the notice of the Westminster Medical Society, to state merely what I had seen of that process during a visit which I have lately made to Paris; and to express, in addition, my gratitude to M. Amussat, for his kindness in directing the experiments I then performed, under his eyes, on this interesting point. But in meditating on the subject, I have found it so deserving of an ample *exposé* in this country, that I have resolved upon giving such a view of it as will connect it with the other hæmostatic processes now in use in surgery, most of which are of very high antiquity.

The arrestation of the current of blood, according to that excellent observer, Jones, depends on the formation of a *conical clot* in the arterial tube; on the retraction and contraction, or puckering, of its extremity, and on the pressure of the parts surrounding the cut end of the vessel. When these causes are sufficient, as they often are, to stop hemorrhage from small vessels, of course all other means are dispensed with. Koch, of Munich, is in the habit of relying on this spontaneous ceasing of the flow of blood, and favours it by the position of the limbs, in cases of amputation, as well as by the application of cold lotions.

Hemorrhage is also stopped by *laceration*. Of this we have an example in the removal of certain tumours, where the vessels that supply them, or with which they are connected, might forbid the use of the knife. When a limb is torn off, the vessels which have been drawn violently out retract in some degree, and no blood flows. In this we have an instance of the influence of laceration and retraction combined. It is well known, that when "littering," certain animals separate themselves from their young by gnawing asunder the umbilical cord; and Jones has shewn, that, if an artery be pinched and jagged, the internal tunics are torn, and assist the formation of the clot, and prevent hemorrhage.

Again, if a small divided artery be drawn out, and turned down on itself, until the clot has had time to form, the blood ceases to flow. This method has been successful in the intercostal artery, and others of small caliber. *Styptics* of various kinds and in various modes have been used for the same purpose.

Thus, small cones of alum or sulphate of copper have been used as corks in the mouth of the cut artery. These means have justly fallen into disuse. Talrich's styptic has been tried; but it appears useful only in small vessels. Agaric, amadou, cobweb, sponge, and powdered resin, have been looked upon as endowed with a styptic power; and, in capillary hemorrhage, solutions of sulphate of iron, sulphate of copper, of alum, or nitrate of silver, are found effective.

Cauterization is now but little used, except in operations on the rectum or uterus. In such cases the iron is usually applied at a white heat, on the mouth of the vessel, to which it is passed down through a conducting tube of the same metal. If the iron be not at a white heat, it adheres to the eschar, and detaches it, so that the blood continues to flow; and even when it is applied at the proper heat, if it be allowed to remain too long, the same effect will follow.

Compression is of great use, and is of two kinds, direct and indirect; direct, when the vessel is commanded by the finger of the surgeon, in a small wound, or a flap amputation, or with the graduated compress of agaric, lint, or folds of linen, &c.; indirect, when it is established at a distance from the wound, by the tourniquet or any other means. It is needless to remark, that these different modes are resorted to, separately or in combination. I have seen a capillary hemorrhage which could not be checked by direct compression until the femoral artery was compressed.

Koch of Munich's method after amputation, consists in joining the flaps by bandages, placing a long compress on the artery, and raising the limb. An assistant keeps up a gentle and continuous pressure for several hours, and until the pulsations are observed to become weaker in the stomach. He considers the danger from hemorrhage to be at an end when the dressing becomes dry and stiff, which it does within 12 or 24 hours.

The *ligature*, the thought of which Paré looked upon as an inspiration vouchsafed to him by the Almighty, was not, however, an invention of his time. It was described by the ancients. A description of this method, comprising its effects on the artery, the substance of which it should be made, the manner of its application, &c., would form subjects ample enough for the consideration of an entire evening. Happily being the plan most in use, it is also the best known, and, therefore, in this assembly especially, the details which belong to it may be omitted. I shall merely add that Jones recommends the use of a very slender thread of silk, applied tightly enough to cut the internal tunics

of the artery. Of the application of ice and temporary ligatures I need say nothing.

The operation of *torsion* has in its effects great analogy to the ligature, and seems capable of supplanting the ligature in many cases. It is simple, and in saying this we give it the highest recommendation that can be bestowed on a surgical process. The merit of its invention belongs, undoubtedly, to M. Amussat, and would, if he had no other of his numerous claims to fame, suffice to render his name illustrious amongst the surgeons of the present age. As I have said before, there is nothing new in crisping, jagging, or even turning on its axis, a divided artery, in order to stop hemorrhage; for from the time of Galen to our own time, this process was known, but the operation of torsion, —in the sense which is now attached to the word torsion, methodical in its arrangement and certain in its effects,—is an entirely new and most valuable hæmostatic process.

M. Amussat having observed that in gunshot or contused wounds, or in great lacerations of the limbs, even large vessels rarely bleed, imagined, that by imitating this contusion of the vessel, the same effect must follow. In order to test this idea, he instituted a series of experiments, which, however, led to no decisive result. But he was struck on one occasion, in which he had twisted the artery, with the fact, that it furnished no blood; and thus an accident developed the truth which his reasoning from other facts had anticipated.

I shall now describe the manner in which M. Amussat practises torsion. He seizes the divided vessel with a pair of torsion forceps, in such a manner as to hold and close the mouth of the vessel in its teeth. The slide of the forceps shuts its blade, and the artery is held fast. The artery is then drawn from out of the tissues surrounding it, to the extent of a few lines, and freed, with another forceps, from its cellular envelop, so as to lay bare its external coat. The index and thumb of the left hand are then applied above the forceps, in order to press back the blood in the vessel. He then begins to twist the artery. One of the methods consists in continuing the torsion until the part held in the forceps is detached. When, however, the operator does not intend to produce that effect, he ceases, after from four to six revolutions of the vessel on its axis for the small arteries, and from eight to twelve for the large ones. The hemorrhage instantly stops. The vessel which had been drawn out is then replaced, as the surrounding parts give support to the knot which has been formed at its extremity. The knot becomes further concealed by the retraction of the artery, and this retraction will be

proportionate to the shortening which takes place by the effect of the twisting, so that it will be scarcely visible on the surface of the stump. It is of the utmost importance to seize the artery perfectly, and to make the stated number of twists, as otherwise the security against the danger of consecutive hemorrhage will not be so perfect.

It has been already stated, that, when we apply a ligature, the internal tunics of the artery are divided. In the torsion, these tunics are also divided; but in comparing one with the other, there will be this difference,—that in the case of the ligature, the internal tunics, though detached from the cellular coat, remain, nevertheless, close to it, so that there exists but very little space between them; but in the torsion these tunics ascend, and take a position in the middle of the clot, to the rapid formation of which they contribute, and the clot itself extends to the next collateral: a space exists between the knot and the internal tunics, in which the cellular coat inflames, when plastic lymph is thrown out, and the first obturation of the end of the vessel is effected. The same process of exudation takes place from the internal tunics higher up, and the clot thus becomes adherent to the circumference of the arterial tubes, and thus also the obliteration of the vessel is rendered doubly secure.

Experiment 1.—M. Delcroix, M. Amussat's assistant, laid bare the femoral artery of a middle-sized dog, when I applied two pairs of forceps on the vessel, which I divided in the interval, and, according to the process described, twisted the upper end eight times, and replaced it. There resulted no hemorrhage. I then twisted the lower one, but not being *au fait* of the manœuvre, which I should observe requires tact and practice, it was imperfectly effected. Consecutive hemorrhage came from the lower vessel, which I sought, and, again seizing it and freeing it from its connexions, I twisted it eight times, when the hemorrhage instantly ceased.

Experiment 2.—I laid bare the femoral artery of a large dog. The vessel was of large caliber: I proceeded as before, and no hemorrhage took place.

Experiment 3.—The carotid of a mastiff was laid bare, and I practised the torsion as before. The size of the vessel was considerable. I twisted the vessel on the side of the capillaries eight times, and on the side of the heart until the rupture of the portion held in the forceps was effected. No hemorrhage ensued from either.

Experiment 4.—The femoral of a large dog was laid bare, and was twisted in the usual way on one side, until rupture was effected, and on the other until a knot only was formed. I now,

at M. Amussat's suggestion, untwisted the knot. No hemorrhage followed, although the knot was entirely untwisted.

Experiment 5.—In another experiment the epiploon of a dog was exposed, and a portion of it removed. The divided arteries, which were numerous, furnished blood abundantly. They were seized and twisted two or three times each, when the hemorrhage ceased.

It would be tedious to prolong the recital of experiments, for they invariably, and under whatever circumstances performed, furnished the same results.

Another illustration of the efficacy of torsion will be found in the torsion of any given artery, the radial for instance. If a syringe be applied higher up, and water be impelled from it through the tube of the twisted vessel, the knot will be raised up, but it will remain untwisted, and not a drop of water will pass, no matter what force we employ.

In examining minutely what takes place in the twisted artery, we find the internal membranes twisted and forming a cone, of which the apex is directed towards the heart. If we cut this cone longitudinally, it presents a clot of blood which is strongly adherent to the inner coat of the artery, and which completely stops it up. If we examine the artery, at a certain distance of time from the period of the operation, we find this clot and membranes solidified, and the vessel obliterated as far as the next collateral.

So much for experiments on the lower animals.

The method of torsion has been employed in operations on the human body with the same results. M. Amussat himself now employs no other hæmostatic method, and I can state that he has found it successful in castration, in amputations of the thighs, arms, &c., and in the disarticulation of the shoulder-joint. M. Fricke, of Hamburgh, is so satisfied with this method, that he employs no other, either in his private practice, or in the hospital over which he presides.

The frequent examinations which M. Amussat has had an opportunity of making on the effect of the torsion of arteries, have suggested to him another method, which he calls *refoulement, or pushing back into the arterial tube the divided internal membranes.* The refoulement of these membranes is effected without any division of the artery. The vessel is simply laid bare, and seized with a forceps, beaked in the usual way, but which, above the beak, is rounded in both blades. The artery is pressed strongly between the rounded part of the blades, and thus the internal membranes are cut. Another and a similar pair of forceps is now fixed on the flattened vessel, and the membranes are pushed

back, or *refoulées*, by a zigzag movement of the first forceps. One, two, or three, or more, of those *refoulures* or *machures* may be made; and from some of the arteries treated in this way, I saw the following results. The outer or cellular coat inflames, and plastic lymph is exuded. The internal membranes fall into the same circumstances as in the case of torsion, but with this difference,—that the number of diaphragms arranged to form clots is in the ratio of the *machures* made on the artery.

In no instance, when properly employed, either in animals or in man, has the twisted artery been observed to ulcerate, or become gangrenous. Its effects, and the organic changes which it produces, appear to be these:—the internal membranes are broken; they become narrow, or, rather, roll up and join, so as to form a *cul de sac;* they pour out plastic lymph, which adheres to the clot, which is formed immediately and invariably between this point and the nearest collateral. The outer membrane forms another *cul de sac*, and its internal surface pours out plastic lymph also. A similar process takes place between the outer surface and the surrounding parts.

Let us now see what takes place when the ligature is employed.—1st. Jones states that the middle and inmost membrane, when cut by the ligature, join, and that the cellular membrane remains entire, the blood passing through the collaterals.—2d. A clot is formed in the arterial tube, if there be no collateral vessel immediately near it.—3d. An inflammation of the cut membranes takes place, and they become agglutinated by the plastic lymph which they pour out. The same process obtains on the outer surface.—4th. The portion of the artery comprised in the ligature ulcerates, and it is only when this process is complete that the ligature drops off.

We can now appreciate the advantages or disadvantages inherent in either method. When *torsion* or *refoulement* of the internal membranes is employed, the wound may be united by the first intention. There is no foreign body in the wound, and there is no danger of consecutive hemorrhage.

When the ligature is had recourse to, there is a foreign body in the wound, which must be thrown off by ulceration or gangrene. It often happens that the ulcerative process extends to the surrounding parts, and consecutive hemorrhage takes place, when the end of the artery and the ligature are thrown off. Moreover, the external wound sometimes heals before the ligature is detached. In this case there is danger of an unmanageable fistula. One of the great advantages, therefore, of torsion is, that it allows immediate union of the wound, as will be particularly evident in hemorrhages of the epiploon, and in aneu-

rysm of the carotids, for in the latter case there is great risk of the ligature giving rise to *fusées* of pus descending into the cavity of the thorax. The application of ligatures requires the aid of an assistant. The torsion may be effected by the operating surgeon alone, and, undoubtedly, on the field of battle, this is an incalculable advantage. It is also but fair to infer from what precedes, that torsion may be of the highest importance, in operations which may be performed on the capillary side of an aneurysmal tumour.

*** In compliance with a request made by the Society on the evening that the subject of the foregoing communication formed a topic of debate, Mr. Costello attended to perform the experiments of torsion before the members at the meeting of the 22d of February, when, after making a few prefatory observations on the cruelty of vivisection when the interests of science did not imperatively demand and fully justify it, he proceeded to expose the femoral artery of a terrier dog. The operation was performed with exactness and rapidity. The vessel being laid bare, and a probe passed under it, the members were invited to satisfy their minds that the vessel exposed was the femoral, by examining its size and pulsation; after which Mr. Costello placed two forceps on the artery in such a manner as to make the points opposed to each other leave but a very short interval between them. He then divided the artery between the two forceps, and commenced twisting the upper portion of the artery, and, having counted five turns, he replaced it in the situation from which it had been drawn forth. For a short time there was no hemorrhage: he was now about to twist the capillary side of the artery, when the upper division gave out blood in a full stream; he instantly stopped the hemorrhage with his finger, and requested Mr. Quain, who was assisting him, to twist the other extremity of the vessel, which was still held in the forceps. Mr. Quain made eight turns, and, having replaced the artery, not a drop of blood came forth. Mr. Costello now seized the upper end of the artery, and having twisted it seven times, replaced it. The wound was then examined by many of the members; there was not only no hemorrhage from either of the ends of the artery, but the wound itself seemed bloodless. The experiment was deemed to be so satisfactory, that the carotid was not exposed, as was at first intended, and the satisfaction of the Society was testified by much applause. The observations which were afterwards made by members terminated in a general assent to the reasonings of Mr. Costello and the value of the process demonstrated.

Lancet.

THE VETERINARIAN, APRIL 1, 1834.

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

ON THE EXTERNAL CAUSES OF DISEASE.

[AERIAL POISONS, &c. &c. continued from p. 559 vol. vi.]

By Mr. W. F. KARKEEK, *V. S., Truro.*

IN the preceding numbers of THE VETERINARIAN, when considering the phenomena of respiration, and its effects on the animal economy, we stated, that it was not to be considered as a purely chemical process,—a simple combustion in the lungs, in which the oxygen of the inspired air united with the carbon of the blood to form carbonic acid, to be expelled from the system; but a function composed of several acts; having on the one hand, absorption and exhalation, attributes of all living beings; on the other, the intervention of the two constituents of the atmosphere, *oxygen* and *azote*.

If we for a moment consider the properties of vegetable and animal life, we must acknowledge it far beyond our comprehension. The lowest stage of vitality and irritability appears to carry us beyond mechanism,—beyond chemical affinity.

For this view of the subject we were indebted to Dr. Edwards, Sir Humphrey Davy, and others, whose opinions are not the offspring of speculation, but the necessary result which they were led to by a multitude of facts. It exhibits to us animated beings drawing from the composition of the atmosphere two of their constituent principles, since not only is oxygen conveyed into the mass of the blood, but azote likewise*.

These opinions, we shewed, were strongly supported by Sir E. Home's miscroscopic discovery of the anatomical structure of the lungs, which proves beyond a doubt, that they are calculated to receive supplies from the atmosphere, and to carry a part of them, with the greatest facility, to the heart.

But an additional interest belongs to the subject when we view the atmosphere as connected with the vital principle; for, on investigation, we shall discover, that if the air has an admixture of certain principles, the vitality of all living bodies is in-

* Dr. Edwards on the Influence of Physical Agents.

creased; and, on the other hand, impregnating the air with certain other principles, a tendency to putrefaction is produced.

It will be recollected, that at the commencement of the series of papers that we have had the honour to submit to the readers of THE VETERINARIAN, on Aerial Poisons, &c., we stated, that every thing around living bodies tends constantly to their destruction, and to this influence they would yield, were they not gifted with some principle of re-action. This principle is their life, and a living system is constantly engaged in the performance of functions whose object it is to resist death. We likewise hazarded an opinion, that if there is any one prevailing substance in the animal machine that deserved the name of *vital principle* more than another, it was the *blood*.

> " The fountain whence the spirits flow;
> The generous stream that waters every part,
> And motion, vigour, and warm life conveys
> To every particle that moves or lives."

Our inquiries since that time have confirmed our former opinions, that the blood is the grand circulating magazine of vitality, for the purpose of supplying all parts of the body with life. All the phenomena of life conspire to prove this. Increase the circulation to the acme compatible with health, and you increase animal power; diminish it, and you diminish animal power; abstract a sufficient quantity, and you destroy life. There is no fact better understood, than that the living powers of an organ possess the faculty of preventing the chemical changes to which their contents would, under other circumstances, be exposed. The blood does not coagulate or putrify in the vessels; the urine does not undergo decomposition in the healthy bladder; nor does the food ferment in the stomach, unless that organ be in a state of disease; but if its vital powers fail, the chemical affinities gain the ascendancy, and, after a certain interval, various symptoms arise which plainly shew the change which has been produced. The stronger, therefore, an animal is, or, in other words, the more he is endowed with vitality, the more he possesses the power of resisting the efforts of noxious agents, or those chemical agents that are destructive to life.

We have oftentimes remarked, that when an epidemic disease has occurred in a neighbourhood, it raged with more violence in those stables where the inmates were badly fed and neglected; whilst its effects, in well-aired and properly conducted stables, were less destructive.

When several horses are confined together in an infected atmosphere, the weakest will be the first attacked; whilst in the

strongest, though an equal quantity of the poison may enter the system, yet this is probably thrown out of the circulation through the medium of the secreting organs; and, in this case, a strong animal may escape altogether.

The next question for our consideration is, that if the principle of vitality exists in the blood in this primary degree, from whence is it obtained? *It derives its vitality from the atmosphere,* for without it there can be no evolution of animal heat, and the blood in the lungs would not be purified.

"And God breathed into his nostrils the breath of life." This tenet of the Mosaic philosophy, coupled with another, that "the blood is the life thereof," should be allowed their full weight, in their literal as well as figurative sense; for in coincidence with our assertion, we have living arterial blood circulating from the lungs, and bestowing life to the parts through which it circulates; and comparatively dead venous blood returning to the lungs again to have its vitality renewed.

We shall now bring forward even stronger facts to prove our assertion. For we shall find, on investigation, that the changes which the blood can undergo as to its composition, are fertile sources of the changes in the mode of vitality. The circulating current is endowed with a vital principle, and healthy arterial blood contains a portion of pure air, which it receives in the lungs, and this is diffused in the other material ingredients which enter the circulation through the medium of the thoracic duct.

It is by these ingredients that the blood is formed; but the vital principle is easily acted on by the lungs receiving *impure air,* instead of its natural food, *pure air.*

The lungs may thus be regarded as a second stomach, and respiration as a digestive function. When food enters the stomach its nutrient particles are separated from the crude mass and converted into chyle. When air enters the lungs, its vital properties are separated for the purification of the blood. The nutritious ingredients of both substances are extracted and made subservient to the purposes of life. But the stomach, if it receives impure and diseased food, becomes diseased; so, likewise, with the blood, if it receives the effluvia from decayed vegetable and animal matter, instead of pure atmospheric air, it becomes diseased.

We have striking examples of this fact in glanders and farcy. Both diseases are produced by breathing aerial poisons; and in these diseases, as well as many others, there can hardly be a doubt but that the diseased state of the blood is the sole cause of the diseased state of the solids. When a horse is inoculated with the virus of glanders, he becomes, as is well known, farcied.

The poison causes at first a local disease; but after a time it is observed to travel to other parts of the system. How is the poison conveyed from the original sore to the membrane of the air-passages? The blood is the medium by which this is effected.

We observe a wide difference between fevers arising from an altered and unhealthy state of the atmosphere, and simple inflammatory diseases. The latter is merely, at first, a disease of excitement in the vascular solids,—a disease of the vessels themselves; but in the former, there is something more than a mere increase of action in the vascular solids; for the bloodvessels themselves are not only diseased, *but the blood likewise*. Examples of this are plainly to be seen in those malignant epidemic diseases to which horses are sometimes exposed. The most decided characters of these diseases are debility; there is an actual loss of power observed in the system, generally from the very commencement of the attack. The secretions are vitiated; the breath and all the excretions are fœtid; tumours and fœtid ulcers are seen in various parts of the body, and the poor animal is soon destroyed. At the very commencement of this malignant disease, bleeding may be of service; but suffer only a short time to elapse, and the abstraction of blood will only hasten the catastrophe. In this disease, the blood, both in the arteries and veins, is changed from its natural scarlet, or modena red, to a dark black; and so very unlike healthy blood, that it is evident, from the first view, that it could no more stimulate the heart, or support life in the solids, than putrid water can nourish vegetables, or carbonic acid support respiration; for on opening the heart and examining its contents, we discover it to be a dissolved blood, as thin almost as water, and as black as ink. Four years since, in the spring of 1830, we had several opportunities of examining the nature of this dreadful disease. It was a cold damp spring. The attack came on suddenly; the patient appeared conscious, as it were, of weariness, and was averse to exertion; and when it was attempted, his unfitness for it was seen by the weakness of his limbs, which appeared stiff and contracted, and by a greatly increased frequency of breathing following the least effort. In the cases that died, the limbs became dropsical, and there appeared in all a strong tendency to decomposition. The blood, when drawn, scarcely coagulated. This disease was, without doubt, occasioned by a peculiar alteration of the blood, and was produced by some gaseous poison.

There is this remarkable difference between the malignant disease and one arising from inflammatory action, which would prove to a certainty, even if we had no opportunity of examining the animal after death, that it was occasioned by an alteration of the blood. In common inflammation, when we sufficiently

reduce the increased action at an early period, the disease subsides; whilst in the malignant epidemic, after the excitement is reduced, the greatest danger is still behind. It is, in fact, a disease of that mysterious fluid which, in health, gives life and nourishment to every solid of the system; and which, when vitiated, is by far the most frequent cause of death.

Having now (at least we hope so) brought forward sufficient proof to substantiate our first position,—*that in diseases arising from aerial poison, the blood is vitiated*,—we shall proceed to inquire into the principal sources of aerial poisons.

We have already stated, that we have no test of their presence beyond their effects; and what the precise nature of this deleterious principle is, we are altogether unacquainted with; but if it were in our power to behold the constitution of the atmosphere with our bodily, as with our mental eyes, we should then view the fertile sources of fevers, whatever their form, type, or appellation, and of many diseases incident to both men and animals, the nature and origin of which we are little acquainted with, though their effects are very conspicuous. Such a view would explain what Hippocrates long since called the το θειον, or something divine or inexplicable. For into the circumambient air, as it is called by Lucretius, we should see carried up whatever exhalations arise, not only from the earth itself, but from every organized form of matter, whether living or in a state of decomposition, that is found upon the surface of the earth: the dews of morning, the balm of evening, the fragrance of flowers, the breath and characteristic odour of every animal, the vapour invisibly arising from the whole ocean and its tributary streams, and lastly, that circumscribed and baneful effluvia, however generated, which, when confined to definite portions of the atmosphere, produce those various forms of disease that infect particular places.

Were it possible to obtain such a view as we have imagined, the gases arising from an ill-ventilated and crowded stable would probably assume the most heterogeneous appearance, as we know it to be the most vitiated. Any person may be satisfied of this, by visiting one of those hot and pestilential stables of a morning, when the infected breath of the crowded inmates becomes a putrid exhalation, which trickles down its walls; and where the atmosphere reeks with the effluvia of filth and wretchedness.

> "It is not air
> That from such a source reeks back to thine,
> Sated with exhalations rank and fell,
> The spoil of dunghills, and the putrid thaw
> Of nature,—when from shape and texture she
> Relapses into fighting elements."

It cannot be surprising that such an atmosphere must act immediately on the blood, impair its vitality, deprive it of its red colour, and thereby render it unfit to stimulate the heart and other organs through which it circulates; unfit, also, to supply materials for the different secretions, and to renovate the different tissues of the body, as well as to sustain the energy of the brain,—offices which it can perform only while it retains its vermilion colour and arterial properties. Digestion, respiration, circulation, secretion, and all the other functions, must act with diminished power and activity in such an atmosphere. Hence all the functions of the body soon become sluggish and irregular, and the whole system loses its tone and energy.

The sudden transitions which those horses must undergo who are constantly exposed to such hot-beds of filth and disease, from heat to cold, and *vice versâ*, from cold to heat, must render them peculiarly liable to inflammation of the lungs and catarrhal affections of every description; also, to those epidemic diseases which we have already mentioned,—diseases that may be said to be conveyed on "the wings of the wind," and whose changes and circumstances are only known by their effects.

In the organs most essential to life, we find the continual breathing a foul and polluted atmosphere very commonly attested; producing, in the brain, staggers and apoplexy; in the lungs, hepatization, tubercles, and vomicæ; in the stomach*, indigestion with all its train of evils; and in the liver†, it vitiates the bile, and produces such changes in its structure, as to be one of

* We have frequently remarked a kind of balance between respiration and digestion; and he who is an attentive observer of horses in a healthy, as well as diseased state, must have noticed that there is a certain balance between the quantity of vital air received into the lungs, and of food which can be digested in the stomach.

† We are certain that the livers of horses are oftener diseased than most persons are aware of, and the principal cause is, a hot and ill-ventilated stable. High heat, particularly when accompanied with a poisoned atmosphere, is almost sure to produce disease in the biliary organs. This is particularly seen in the human subject, chiefly in those situations where there is stagnant water to be acted on by heat. The same appearance is observed in cattle that are stall-fed. In most of the animals that have died with this disease, under our care, the livers, instead of being a dark red colour, were of a pale brown, assuming the appearance of boiled liver; the entire structure was broken down and destroyed, with scarcely any vestige of the natural structure remaining. These cases shew to what an extent disease may go in the organ before life is destroyed; for generally, in these cases, the animal appears in good health and condition previous to the attack. By close inquiries, however, we shall oftentimes find, although they have kept their condition, that, generally speaking, they are bad feeders, and oftentimes break out into cold sweats and shivering after a journey, particularly if cold water is given to them before they are perfectly dry. Thus the symptoms, unfortunately for us, are very indistinct. The inflammation, being of a chronic

the most common and fatal (though slow) diseases to which horses are liable. In the mucous membranes it produces catarrh, thick wind, chronic cough, sore throat, roaring, wheezing, whistling, dysentery, &c. &c. In the cellular structures it produces those anasarcal deposits, such as dropsy of the skin, swelled legs, &c. It disposes the skin to various complaints, such as mange, grease, &c.; and, as an appendix to the frightful catalogue, we may add, farcy, glanders, and that curse on good horse-flesh, specific ophthalmia.

We beg to remark, *en passant*, that we do not suppose that in every one of the diseases we have mentioned as produced by breathing a poisioned atmosphere, the blood is diseased. It would be very unphilosophical, for instance, to suppose that in roaring, whistling, thick wind, or chronic cough, the blood is contaminated. In these cases, aerial poisons probably act as chemical or mechanical stimuli to the mucous membrane which lines the air-passages.

The limits of this paper will prevent our entering so minutely into the subject as we might wish. It is extremely probable that the qualities of the blood are considerably altered in many diseases, though such changes cannot be detected. We observe, for example, a complete alteration in the serum in jaundice in the human subject; and were it not for that change of colour, we should, perhaps, have no evidence that the blood was at all altered in that disease. Velpean* has lately published a Memoir, wherein he observes how much the humoral pathology has been neglected, and of what great importance it is to become acquainted with the morbid changes that take place in the blood; and to illustrate this remark, he details some cases, wherein *puriform matter* was found floating in, and mixed with, the general mass of blood throughout the different large vessels, both arteries and veins. In these cases, abscesses in great numbers, though unaccompanied by the usual characters of inflammation, were found in various parts.

The next point that requires our attention will be, the means we possess for the correction of the evils hinted at. That "prevention is better than cure," is a maxim, the truth of which is universally admitted; and this is not only of importance in respect to horses, but to the health of mankind generally, and particularly those inhabiting large towns, as the continual breathing a foul and

kind, the animal expresses little pain. We have oftentimes seen the complaint accompany disease of the lungs, and those of the air-passages. Bleeding in the complaint sometimes produces rupture of the liver, and consequently internal hæmorrhage and death, *and, in every instance*, it accelerates the catastrophe.

* Lancet.—Lectures on Surgery, by Mr. Wardrop.

polluted atmosphere is the great cause which gradually and imperceptibly undermines the health of a large portion of its inhabitants, and, as far as the evil admits of remedy, it ought to be applied. This is, happily, in a great measure within our controul; and to accomplish this, we have only to imitate nature and employ ventilation on a small scale, as she does it on a large one. As an axiom to be governed by in every instance in the ventilating of apartments, there should be a *regular and renovated supply of atmospheric air.*

Of the vital importance of pure air no further proof need be required. We have likewise shewn that this vital importance depends on its capability of assisting to withdraw from the body, chiefly through the agency of the lungs, portions of that peculiar principle called carbon, the permanent retention of which would be incompatible with the continuance of life. Some idea of the quantity of carbonic acid that is discharged from the blood by means of respiration, may be formed by the experiments that have been instituted for this purpose; from which it appears that, during the process of respiration in an animal of ordinary size, and in health, about twenty-seven cubic inches and a half of carbonic acid gas are given off from the lungs in the course of one minute, which, at the end of twenty-four hours, would amount to 39,600 cubic inches, or in round numbers, 40,000; and, as 100 cubic inches weigh $46\frac{1}{3}$ grains, 40,000 would weigh 18,532 grains. A volume of carbonic acid gas weighing 100 grains contains 28 grains of carbon; a quantity, therefore, weighing 18,532 grains would contain 5190 grains, or nearly eleven ounces; so that a quantity of carbon equalling two-thirds of a pound in weight is daily discharged from the blood by means of the simple process of respiration.

Every exhalation, with the exception of that aqueous vapour which is constantly rising from the surface of the earth as well as of the ocean and rivers, must be considered as foreign to the constitution of the air. Speaking according to the language of the atomic theory, air is composed of one equivalent of oxygen, and two of nitrogen: the best experiments are found to agree very nearly with this, when the air is perfectly pure. The quantity of carbonic acid gas found in air varies from three to eight parts out of a thousand in weight, and the quantity of water is very variable, but is not generally more than one and a half per cent. of the whole weight. These proportions of oxygen and nitrogen are found, as we before stated, in a free atmosphere, not to vary sensibly throughout the whole globe; but when a number of animals are collected in a confined place, where the air cannot be easily renewed, the quantity of oxygen diminishes rapidly, and that of carbonic acid gas increases.

Lavoisier ascertained that when the air out of doors consisted of

27 parts of oxygen
and 73 — nitrogen
100

the air in the lowest ward in the General Hospital at Paris contained but

25 parts of oxygen,
and 71 — nitrogen,
and 4 — fixed air,
100

And when, before the play, the air in the theatre of the Tulieries contained the usual proportion, towards the conclusion of the piece, which was acted before an unusual concourse of spectators, it contained

but 21 parts of oxygen,
and 76½ — nitrogen,
and 2½ — fixed air.

Whence it is evident that the quantity of oxygen or vital air had been diminished in the theatre in the proportion of 27 to 21, or nearly one-fourth; that is, it was one-fourth less fit for respiration than before.

From these examples, the air of an atmosphere which is originally composed of two fluids, in all ill-ventilated stables contains three aerial fluids. These three ærial bodies, though blended together, arrange themselves in rather a singular manner.

There is something mysterious in the composition of such an atmosphere, which cannot be accounted for any theory that is merely chemical, and still less by the doctrine of gravity. Where the three gases are combined, so as to form an atmosphere, gravity may keep the three gases as a whole near to the surface of the earth; but neither gravity, chemistry, nor electricity, will enable us to explain why the lighter gases lift up those that are heavier, and hold them in a state of permanent suspension, even in the air of the highest atmosphere that has been examined.

The air that is expired is a compound of nitrogen and carbonic acid: this compound is unfit for respiration or combustion; it soon contaminates the atmosphere in close places, and renders it no longer respirable. The carbonic acid gas, which, is the *heaviest and most poisonous*, is no sooner exhaled, than it is immediately lifted up. By what power this is effected, we are ignorant of: we may well exclaim with the poet,—

" 'Tis surely God
Whose unremitting energy pervades,
Adjusts, sustains, and agitates the whole."

This is the reason why the purest air is always found at the bottom of an apartment, not because the oxygen is the heaviest, as we were formerly taught at the Veterinary College.

The specific gravity of carbonic acid gas, is according to Guy Lussac, and Thenard - - - -	1.5277
The specific gravity of oxygen gas is only - -	1.1111
Whilst that of nitrogen, the lightest of the three gases, is only	0.9722

Dr. Stevens was the first, we believe, who drew the attention of the scientific to the phenomena; he is incapable of explaining the manner in which it is accomplished any more than ourselves.

Nitrogen, we have shewn, is the lightest of the three atmospheric gases; but this agent possesses a sufficient attraction for the oxygen, to hold it in a state of suspension; and by means of the same power the oxygen attracts the heavier carbonic acid gas, lifts it up, and suspends it even in opposition to its greater gravity. But for the existence of the unknown power, this acid in the atmosphere would never rise. We know that it does ascend; and were it not so, the whole of that heavy gas would, from its greater gravity, fall down and occupy the lowest or that most important part of the atmosphere which is so immediately over the surface of the earth, so as to render it quite uninhabitable.

Sir Humphry Davy tried to inspire a mixture of two quarts of common air with three of carbonic acid gas, without success; but by increasing the proportion of common air to seven quarts, the mixture became respirable. When used in an undiluted state, a burning sensation at the top of the uvula and a violent feeling of suffocation were complained of: giddiness and torpor were its effects when mixed with common air. It is not to be expected, therefore, that a gas of such deleterious properties should enter largely into the composition of a fluid so essential to life as atmospheric air; accordingly it scarcely exceeds one per cent, and it is probable that even this quantity owes its presence more to chemical decomposition than original arrangement.

As there are a number of bodies constantly abstracting oxygen from the air, it might be imagined that its relative quantity would decrease; but no such diminution takes place, except in instances, even from some local cause, where carbonic acid gas is evolved much faster than it can be removed. The fact is, that, if oxygen be absorbed from the air by one class of bodies, it is supplied by another. Plants yield it in large quantities. Thus

by the *respiration of animals*, a portion of oxygen is withdrawn, and a corresponding portion of carbonic acid gas is substituted in its place. By the *respiration of plants* the carbonic acid is withdrawn, and an equivalent portion of oxygen substituted; so that, by the mutual action of the members of the animal and vegetable kingdoms, the balance of the constituent elements of the atmosphere is maintained.

The blood requires pure air as its food; the first effect of the air is to remove the carbonic acid, which the venous blood takes up in the circulation, and when this is effected the properties of the blood become instantly changed. In the commencement of this process the air is the active agent, and removes the carbonic acid from the circulation; but when this is effected, the blood then becomes the acting power, and attracts a portion of the atmosphere. The *pure air*, or at least it ought to be so, then occupies the place of the *carbonic acid*, which is just removed.

[To be continued.]

Veterinary Jurisprudence.

WATMORE *v.* POCKLINGTON.

Is he restive?

THIS was an action, tried at the last Lincoln Assizes, for the difference between the original price of a horse, and that which he fetched when sold at Tattersall's; and also for the expenses, &c. He had been warranted sound, and free from vice; and the plaintiff gave notice of return on the ground that he was restive and lame, from a horny growth on the off fore foot.

Thomas Field was plaintiff's groom. He met defendant at Cox's, the horsebreaker, on Wednesday the 7th of August, 1833. The horse was bridled, and led out of the stable. He looked him over, and saw nothing the matter with him: he was then taken into the stable to be saddled; did not stand saddling well; but one man standing on one side, and a second on the other side, and a third holding his head, he was at length saddled. They said that he had not been out of the stable for some time. They took him out, and led him along the yard once or twice, and then one of Cox's grooms was lifted on him. The horse immediately set up his back, but they walked him once or twice round the yard. Witness then got upon him, and found him very raw in action, and that he did not answer well to the rein. He rode with a double rein. He was cautioned not to use the spur, nor to ride him far, nor to make him sweat, for he had been in physic. Did not ride him long.

His master bought him, and put him under his care. The

horse lay by until Monday: he then rode him out for twenty minutes or half an hour. He walked well, but when he mended his pace he became very hot: he would not answer to the rein. He let him have his head, and then, having his own will, he went quietly enough. He rode him again that day, and shewed him to Mr. Tawney. Did not use the curb rein. Tawney rode him; he set up his back, reared, and threw him. When Tawney rode the horse, he fancied that he was lame in his *near* fore foot; could not see it when he had the horse in his own hand. His master is a grazier, and buys horses to graze and sell again. Tawney bought the horse.

Cross-examined.—Did not know at what profit the horse was sold to Tawney. The horse set up his back when the saddle was put upon him: this was common enough when a horse is fresh from grass. Went raw with the curb, but better with the snaffle, but then with his nose up. Tawney purchased him, although he had thrown him, because his master warranted him.

Henry Tawney is a horsedealer in London; was down for the purpose of buying horses: called at Watmore's; saw this horse; saw him walked five hundred or six hundred yards, and then said that he would not answer his purpose: was told that the horse had been out at grass. Told Watmore that he thought the horse was lame: Watmore replied that he was sound, and that he would warrant him. He got upon him with some difficulty, but the horse plunged, and reared, and threw him: nevertheless, he bought the horse with a warranty of his being sound, and free from vice.

The horse was then committed to the care of his servant, who led him from the neighbourhood of Boston, where he was purchased, to East Barnet, and he did not see him any more until the 26th: he then thought him lame in the *near* fore foot. His servant then mounted him with difficulty, and the horse reared and plunged, and tried to throw the man: he was what is termed a *rusty* horse; such a horse cannot be said to be free from vice. At last, they got him out of the yard into a field, but they could do nothing with him: he reared and plunged, and would have his own way, but would not go where the man wanted him to go. He was then put into the stable again. He tried him again on the 4th of September, after having given notice of return.

Mr. J. Watmore then saw him: he was lame. They again saddled him, but he reared up and plunged, and got against the wall, and tried to get the man off: could not get him out of the yard at all that day. He had previously observed that the horse appeared to have whip-marks upon him, as if he had been punished. Has been all his life a horsedealer. He was a vicious horse. Mr. Watmore asked him to try to ride him for a few

days, but he eventually returned him; and, on the 15th of September, he was sent to London. Mr. Watmore took him back, and repaid him the money. Mr. Watmore previously asked him to keep the horse at £100, but he would have nothing more to do with the animal. The horse would lead as quietly as another horse; it was when he was saddled that he was thus restive.

Cross-examined.—Was sure that he was lame; thought him so from the first; could not tell the nature of the lameness. Was at Tattersall's when the horse was sold: he was sold as a returned horse—was sold for sixty-two guineas. He did not bid for him, nor did his partner, nor anybody for them. The defendant bought him again.

James Tooley was servant to Tawney—led the horse to Barnet; was six days on the road; fed him as usual: he led very well. On the following Sunday he attempted to ride him: he set his back up when saddled. Led him out of the stable into the field; got upon him: there were more horses exercising in the field; he followed them round the field, but, when he wanted, he could not get him away from them: got down and then led him away; but he had previously tried all he could to manage him: he jumped, plunged, and threw himself all manner of ways.

He took him out again on the Monday: he was then worse than ever; he could not get him out of the yard; threw himself down with him upon him: had him in the yard for twenty minutes, rearing and plunging, and running against the wall, until he threw himself down, and then there was an end of him for that day. He rode him again when Mr. Watmore came; he got against the wall as soon as he was out of the stable door: never rode him afterwards.

He was then sent to the livery stables; he went quiet enough, for he was led. He was a vicious horse—was lame in the *near* fore foot: did not know the nature of the lameness; it was enough for him that the horse was lame.

Cross-examined.—Said that it was enough for him to know that the horse was lame, because, if he was lame, he could be returned. Rode him with a double bridle, but without spurs: always uses the snaffle portion of the bridle, but thinks it best to have a double rein. He told his master that the horse was *rusty*, as soon as he came home.

—— *East*, partner to Tawney, was present when his partner bought the horse; saw him afterwards: he was lame in the *near* fore leg. Saw him tried at East Barnet: he was a decidedly restive horse.

R. Phillips saw the horse at East Barnet: saw the groom attempting to ride him: gave the same account as the others, and

is sure that he is a vicious horse. He was lame in the *near* fore leg.

T. Watmore, brother to the plaintiff, lives in Surrey: went with his brother to Barnet, and saw the horse—saw him ridden: he was restive; he shewed a great deal of vice. Communicated with his brother, and, in consequence, made Tawney an offer that he should retain the horse at £100. Tawney refused: the horse was unfit to ride.—Notices were then read from the plaintiff to the defendant, complaining that he had not replied to former applications, and informing him that the horse would be sent to London, and placed there in a livery stable.

Another letter was read, stating that the horse had been a certain period at these stables, and that the plaintiff should proceed to sell him.

J. Parish, the son of the livery-stable-keeper to whom the horse had been sent, remembers the horse well; he was with them ten weeks. Rode him out four times; was obliged to lead him out of the yard into the street before he could mount him; he would then go very well, perhaps for four hundred or five hundred yards, and then rear and sidle against a wall: would seldom go the way he wished him, but had a decided will of his own. Once he did mount him in the yard, but he was obliged to get off and lead him into the street before he could get him on. Jalland, the farrier, was sent to examine the horse: Jalland is since dead. He (witness) never saw any lameness.

Cross-examined.—The horse stood idle in the stable; he would have ridden him out for exercise if he could. When he got him out, he rode him as far as the horse chose to go, and then returned, for he could not get any farther.

Re-examined.—He wanted to go round different corners, and reared up if prevented. He took him just about where he lived, and when he turned homeward the horse would do very well, for he was doing as he liked, and going home.

G. Parish, brother to the preceding witness, rode the horse three times; he went just such way as he thought proper: if thwarted, would rear up and jump, and endeavour to throw him.

The Counsel for the defendant asked, If the horse was lame and restive, how came he to be bought at a high price by a dealer, who ought to know something about a horse, and sold by him to another dealer at an advanced price? Could any man of common sense believe that this would be the case? The truth of it was, that he was a fine horse, and they thought they should get a fine price for him, and they had kept him idle and full of corn, and made him just what every horse of spirit, every horse worth having, would have been; and then, disappointed in their speculation, they wanted to return him. As for the lame-

ness, he would prove that the horse never had been lame until they made him so, and then he was lame in the other leg. (The Counsel for the plaintiff here said he would give up the unsoundness, and rest his case on the viciousness of the animal.) Well; he was glad to find that his learned friend began to be sensible of the nature of his cause: he had now but one leg to stand upon, and he soon would not have that; for he would bring forward witnesses who had known the horse from the day he was foaled, and who would tell the jury that he never had any vice about him.

— *Moore* was servant to the defendant.—Knew the horse well—groomed him—a quiet horse in the stable: rode him often without saddle—had no difficulty in doing any thing with him. After he had been up some time, he went out again to grass, and was then sent a second time to Cox's (the breaker). Saw him from time to time while he was at Cox's; saw him ridden by Cox's men. When the horse came back from Cox's, he rode him. He had him under his care for five or six months. After this he went to Mr. J. Pocklington's, the brother of the defendant, and when he came home was once more turned out to grass, and, coming up, he was sent to Cox's to be *made up* for sale. Nothing vicious about him while he knew him; no difficulty in mounting him.

Cross-examined.—Has seen him saddled many times—has often saddled him himself; has ridden him with a saddle, with a cloth, and bare-backed. He once threw him by jumping quite aside, but he could never tell at what he started: he never saw him throw any one else; had heard of his having thrown Caps, but nobody else. Never saw him set his back up. Knows the horse's dam; his master has her now: she is not vicious at all. Was sent to Cox's the last time to be made up.

— *Cox*, the horse-breaker.—He not only breaks horses, but takes them in to get into condition. Knows the horse well: he was first put into his hands when he was three years old; he was sent to be broken. The horse was never, to his knowledge, in any other person's hands but his:—he was then quiet in the stable and quiet out; he did not take more breaking than other horses. At four years old he was put into his hands again; had him for a month; shewed him to several persons, who came with the view of buying him: was bid money for him. He then went to Mr. J. Pocklington's; saw Mr. Pocklington ride him with a snaffle. He afterwards came into his hands a third time to be made up for sale: he had him about three weeks at that time; he did not ride him himself at that time, but he saw him ridden by his man, with a saddle, bare-backed, and in clothes: he was perfectly quiet. Recollects Mr. Patmore's coming to his pre-

mises: had at that time fifteen other horses for sale. He was well acquainted with Mr. Patmore before. He looked at all the horses in that stable: there were seven of them; he wished to see this horse out; saw him run; asked the price of him: 100 guineas. Told him he could not sell him without the owner: they met, and the horse was sold; he was fairly tried. Saw Patmore afterwards, who said that he had returned the horse as being restive: told him that the horse never had been restive; he was at all times in that condition, that, if he had had vice, it would have shewn itself. The last time the horse was with him the servants were new, and yet the horse was quiet.

Cross-examined.—Does not know the names of the servants who were then about him. He has sometimes a greater number of helpers than others, and he often does not know their names. Does not know the name of the man who took care of this horse, nor where he now is. It was a particularly quiet horse, and well broken. It may appear to be carelessness to trust valuable horses to men whose names he does not know, but he, and others in his way, are sometimes obliged to do it.

The horse never plunged, but he did sometimes set his back up a little.—"Was it from this setting up of his back that you call him a particularly quiet horse?" "I don't know; but he was a quiet horse, for all that."

It is not unusual for him to have horses twice, and even three times. Never whipped him at all, at least never punished him with the whip. Heard of his throwing Caps, but nobody else.

Went to London about this horse, at the desire of Mr. Pocklington: saw him in livery—saw him run out in hand: did not mount him, and did not hear of his being restive there.

Joseph Pocklington is brother to the defendant. Knows the horse—knew him all the time he was in his brother's hands. Had him under his care three or four months; used to ride him about the farm, and to market: he rode quiet. Has ridden him without saddle—never knew him to be vicious: has ridden him after the hounds—always with a snaffle—took his fences well—perhaps, sometimes, a score in the course of the run. Saw his brother ride him at Croxton Park races; was quiet there: this was at the Easter of the last year. Quiet in stable—quiet when saddling: has seen him saddled several times. Was present when Caps was thrown: the horse had no saddle on then. The boy used to ride him with the same saddle that he used for the donkey: the boy got upon the horse again immediately.

Cross-examined.—"I dare say you would swear that it was one of the quietest horses you ever rode?" "Yes; I would. Did not know that he had thrown Caps more than once; and that Caps had been forbidden to ride him."—"Why did you

order a man named Maunder to ride him one morning before you went hunting?" "Maunder did ride him."—"And you ordered Maunder to stick to him?" "I don't know about that."—"Was he not restive at that time?" "He did jump about a little."—"And you flogged him a little to reduce him?" "I cannot swear about the flogging."—"And after that you rode him?" "Yes."—"Did he not once throw this very Maunder?" "I believe he did."—"And yet he was one of the most quiet horses you ever rode?" "He was always quiet with me."

James Jackson has ridden with J. Pocklington on the road, as much as thirty miles at a time: the horse was always quiet. Has followed the hounds with Mr. Pocklington: the horse did his work well, and was quiet.

—— *Caps*, nineteen years old, has often ridden this horse; used to ride him with the donkey's bridle: was exercising him in the grass pasture when he was thrown. Often used to ride him, and with or without saddle. He used to play about a bit when he had not been out for a long while: always mounted without help; behaved very well on the road. Sometimes a a week or more at a time without going out.

Cross-examined.—Threw him once—was not forbidden to ride him again: he was merely at play when he threw him. Rode with a snaffle, and no curb, the ass's bridle, which went under the jaw: quiet when at regular work, but playful when kept up a bit, just as a body would like him.—"Now, has he not a will to go his own way?" "He goes any way that a body wants him."—"Now, did not you beat him sometimes?" "Why, I liked to be master of him."—"Master of him! Now don't you recollect how you used to beat him to do that?" "No; I don't."

W. Cooper is servant to Mr. Berridge, about a mile from the defendant's: knows the horse well, up to last April: his master wanted to buy him. Has been with other gentlemen to see him; has seen him ridden many times, by Mr. Berridge among the rest: behaved well. Has seen defendant ride him two or three times: always thought him a very quiet horse.

Cross-examined.—Thought him the best riding horse in that part of the country: never heard of his throwing any one until to-day; never saw the saddle put on.

W. Pattison is a farrier; has shod the horse three times; the last time was in August: he was very quiet and tractable every time. Cox's men stood beside him. Never saw him vicious.

Cross-examined.—The men stood by the side of him for fear he should not be kind.

Thomas Pocklington is uncle to the defendant; lives in Essex: was at Tattersall's when the horse was sold. Attended the sale, and a friend bought him for him. Had seen him several times before; has had him ever since. Has ridden him frequently: very quiet in the stable, and very quiet out—the quietest horse alive. Has ridden him with the hounds; and when he has got another fox, he means to enter him for the hunter's stakes at Chelmsford.

Cross-examined.—"Was he quiet from the first with you?—from the very first? Would he not jump and dance about a little at times?" "When he was with other horses, he would play a little."—"Ah! you don't mind these things: I hear that you are one of the boldest riders in the field?" "Not the worse man for that, am I?" The horse was led from Tattersall's to a stable near St. Paul's, and his son led him home.—"You came up to Tattersall's purposely to buy him, did'nt you?" "May be I did."—"Then why did you not ride him home yourself?" "Because I came by coach, and had no saddle."—"Why did you not bring a saddle with you?" "Why should I bring a saddle before I knew whether I should have a horse? You may as well ask me why I did not bring up my wife?" Went out of the yard quietly—went home quietly: never restive.—"But you say that he would play a little when with other horses?" "Why, I'll tell you about that: I got him across some timbers and hurt him, and I had him up for more than three weeks; and then, the first time he got into the marshes, he began to play among the other horses; and the more he played, the more I liked him. I hunted him at least eight or nine times." In his judgment he was not a vicious horse at all.

Verdict for the defendant, on the plea that, although the horse might have been restive when in the possession of the plaintiff and others, there was not sufficient proof of his having been previously a vicious horse.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

Gleanings in Natural History. By Edward Jesse, *Esq., Surveyor of His Majesty's Parks and Palaces.* London: John Murray, Albemarle Street. New edition.

This work contains a good deal of interesting matter on the subject of natural history.

If the history of man, in his mental and physical attributes, be the most interesting branch of investigation and study to the human surgeon, the history of the lower animal kingdom, which is second only in utility and value, is of equal importance to the veterinary surgeon. The large beasts of the field and of the forest, the smaller tribe of the woods and the plains, were all created for the use of the human race. Proud and powerful man, the lord of the creation, commands, controuls, or kills all such living creatures as either conduce to his real wants or artificial pleasures. Stationed thus so pre-eminently above all other animated beings, it becomes his bounden duty to cultivate those thinking and rational powers with which he is naturally endowed. It will, therefore, be apparent, even to the cursory observer, that the study of natural history is not merely a subject of rational amusement, but is really an important branch of the study of the veterinary surgeon. In the horse, the cow, the sheep, and the dog, we view animals of various properties and characters; and it is well known that all these belong exclusively to his practice, inasmuch as they are essential to the welfare of civilized society. Indeed, the more minutely we search into their history, habits, and economy, the better we shall be able to alleviate those diseases to which they are liable.

This little work is introduced in a singularly modest manner; it assumes no pretensions to science, and is written in a similar style to Mr. White's Natural History of Selborne;—a work which, whether we consider the useful information it contains, or the elegant and agreeable manner in which it is written, has and will continue to afford pleasure and gratification to every lover of Nature, as long as her works have power to charm. We consider the present volume equal in every respect, if not superior, to that of Mr. White's: every page abounds with information, and proves that

> "Not a tree,
> A plant, a leaf, a blossom, but contains
> A folio volume. We may read, and read,
> And read again, but still find something new,
> Something to please, and something to instruct,
> E'en in the noisome weed."

We shall now let the author speak for himself, for we cannot better express our approbation of it than by inserting a part of its contents in THE VETERINARIAN.

Reason in Animals.

> "They also know,
> And *reason*, not contemptibly."

"It is no doubt exceedingly difficult, and perhaps impossible, to define where instinct ends and reason begins in animals. But

that some of them are endowed with a faculty which does not come under the usual notions of instinct, by whatever other name we may choose to call it, will, I think, hardly allow of a dispute. This, as it strikes me, appears in the different degrees of intelligence which we are accustomed to recognize as elevating one species of animal above another—as the *half-reasoning* elephant, for instance; and the friend of man, the dog, above numberless others. Now, instinct of one tribe, one would think, as much as in another, must be full and perfect, and would not admit of our considering the degree of intelligence manifested in one species as higher or lower than that possessed by another. Again; much more must we conceive that the proper instinct of any species will be fully, and therefore equally, possessed by all individuals of that species. How then, upon the notion of mere instinct, shall we account for that superiority of intelligence which is found in one individual to others of the same species, and which is familiar to those who are employed about or in any way in the habit of *conversing* with animals? But the observation which appears to me most decidedly to carry the faculties of animals to something exceeding the measure and character of instinct, is that of the new and ingenious contrivances to which they will often have recourse in situations, and upon occasions, much too accidental and peculiar to admit of our imagining that they could have been contemplated and provided against in the regular instinct of the whole species. This we should naturally be disposed to conceive must have been given to regulate the ordinary habits of the animals, and adapted to those exigencies of their mode of life which are continually occurring; not to such as do rarely, and might, one would be tempted to say, never occur."

Our space will not admit of inserting the different instances which the ingenious author has adduced to support his position; the following, however, will be sufficient to explain what he means:—

"I was one day feeding the poor elephant (who was so barbarously put to death at Exeter Change) with potatoes, which he took out of my hand. One of them, a round one, fell on the floor, just out of the reach of his proboscis. He leaned against his wooden bar, put out his trunk, and could just touch the potatoe, but could not pick it up. After several ineffectual efforts, he at last blew the potatoe against the opposite wall with sufficient force to make it rebound, and he then, without difficulty, secured it. Now it is quite clear, I think, that instinct never taught the elephant to procure his food in this manner; and it must, therefore, have been reason or some intellectual faculty which enabled him to be so good a judge of cause and effect. Indeed, the reflecting power of some animals is quite extra-

ordinary. I had a dog who was much attached to me, and who, in consequence of his having been tied up one Sunday morning to prevent his accompanying me to church, would conceal himself in good time on that day; and I was sure to find him either at the entrance of the church, or, if he could get in, under the place where I usually sat. A gentleman, a good shot, lent a favourite old pointer to a friend who had not much to accuse himself of in the slaughter of partridges, however much he might have frightened them: after ineffectually firing at some birds which the old pointer had found for him, the dog turned away in apparent disgust, went home, and never could be persuaded to accompany the same person afterwards. I have often been much delighted with watching the manner in which some of the old bucks in Bushy Park contrive to get the berries from the fine thorn trees there: they will raise themselves on their hind legs, give a spring, entangle their horns in the lower branches of the tree, give them one or two shakes, which makes some of the berries fall, and they will then quickly pick them up. The power which bees possess of ventilating their hives, and of producing such a temperature as will prevent the wax from melting in hot weather, is, I think, another proof that something more than mere instinct influences their conduct; as, in their natural state, bees are probably not in so confined a space as they are in our common straw hives, or exposed so much to the heat of the sun. In hot weather a number of bees (the number probably being regulated by the state of the atmosphere) may be observed busily employed at the bottom of the hive moving their wings with so much rapidity, that the motion of them is almost imperceptible: if, while this action is going forward, a lighted candle should be held at an opening on the top of the hive, it will immediately be blown out; a fact which will enable you to form some idea of the current of air produced by these insects from the motion of their wings. I have, however, known instances in extreme hot weather, when all the labours of the bees to keep the hive in a proper temperature have failed, and a part of the wax was melted. In this case it is dangerous to go near the hive: the bees are in a state of extreme irritation; and though I fancy that mine know me, and receive me as a friend, and allow me sometimes to take liberties with them with impunity, yet, at the time referred to, I have suffered from their stings in endeavouring to shelter them more effectually from the heat of the sun."

From the instances which we have given, the reader will be inclined to agree with the author, that some animals are endowed with a faculty which approaches very near to reason. There is no surer test of reason, than when, after having tried one mode of

accomplishing a purpose, recourse is had to another more likely to succeed; and we consider that some of the instances which we have given will sufficiently prove the reasoning powers of animals; or, if not quite amounting to reason, it is clear that they are in possession of a superiority of intellect which approaches very near to it.

Happiness and Gratitude of Animals.

It is astonishing how much man might do to lessen the misery of those creatures which are either given to him for food, or use, or for adding to his pleasure, if he was so disposed: instead of which, he often exercises a degree of wanton tyranny and cruelty over them which cannot be too much deprecated, and for which, no doubt, he will one day be held accountable. The following instances prove that they are capable of shewing gratitude and affection to those who have been kind to them:—

"I know," says Mr. Jesse, "many persons who, like myself, take a pleasure in seeing all the animals about them appear happy and contented. Cows will shew their pleasure at seeing those who have been kind to them, by moving their ears gently, and putting out their wet noses.

"My old horse rests his head on the gate with great complacency when he sees me coming, expecting to receive an apple or a piece of bread. I should even be sorry to see my poultry and pigs get out of my way with any symptoms of fear.

"The following little anecdote will shew the gratitude and recollection of the kindness shewn to an animal:—A young lady in the neighbourhood (who, if she would even read this anecdote, will not, I hope, object to having had this instance of her humane disposition recorded) brought up a calf, whose mother had died soon after it was born. She made a pet of it; but when it became an heifer, for some reason it was parted with, and she lost sight of it for about two years. At the end of that time, as she was walking with a friend in a lane, she met some cows, when one of them left the herd and came up to her, shewing evident symptoms of pleasure at seeing her: she immediately knew and patted her old acquaintance, who, after being satisfied by these marks of her favour that the recognition was mutual, quietly turned away, and joined her companions. An instance of the same grateful recognition occurred in the case of a lion which is at present, or was lately, in the Tower of London. This lion, when very young, became the property of a gentleman; he had treated it kindly, kept it some time with him abroad, and, on his return, brought it over to England, when, not knowing what else to do with it, he sent it to the Tower: here he became extremely fierce, and was always mentioned by the

keeper as an untameable animal. At the end of two or three years the gentleman called at the Tower to visit his old acquaintance, who immediately recognized him, and, upon his being admitted into his cage, shewed the strongest symptoms of pleasure at again seeing his former master. A story somewhat similar is mentioned by Mr. Bingley, in his Animal Biography.

"Animals which are unable to associate with their own species, will sometimes form most strange attachments. I had last year a solitary pigeon, who, being unable to procure a mate, attached itself to an old barn-door fowl, whose side it seldom left at night, roosting by him in the hen-house. The cock seemed sensible of the attachment of the pigeon, and never molested it or drove it from him. I had also a tame hedgehog, which nestled before the fire on the stomach of an old lazy terrier dog, who was much attached to it, and the best understanding existed between them. I have also seen a horse and a pig associate together, for want of any other companions. And Mr. White, in his Natural History of Selborne, mentions a curious fact of a horse and a solitary hen spending much of their time in an orchard, where they saw no creature but each other: the fowl would approach the quadruped with notes of complacency, rubbing herself gently against its legs, while the horse would look down with satisfaction, and move with the greatest caution and circumspection, lest he should trample on his diminutive companion. At Aston Hall, in Warwickshire, I remember to have seen a cat and a large fierce bloodhound who were always together, the cat following the dog about the yard, and never seeming tired of his society: they fed together, and slept in the same kennel.

"A gentleman residing in Northumberland assured me that he had a tame fox, who was so much attached to his harriers, and they to him, that they lived together, and that the fox always went out hunting with the pack. This fox was never tied up, and was as tame, playful, and harmless, as any dog could be. He hunted with the pack for four years, and was at last killed by an accident.

"Some animals of the same species form also strong attachments for each other. This was shewn in the case of two Hanoverian horses, who had long served together during the Peninsular war, in the German brigade of artillery: they had assisted in drawing the same gun, and had been inseparable companions in many battles. One of them was at last killed, and after the engagement the survivor was piqueted as usual, and his food brought to him; he refused, however, to eat, and was constantly turning round his head to look for his companion, sometimes neighing as if to call him. All the care that was bestowed upon him was of no avail: he was surrounded by other horses, but he did not notice them; and he shortly afterwards died, not having

once tasted food from the time his former associate was killed. A gentleman who witnessed the circumstance assured me that nothing could be more affecting than the whole demeanour of this poor horse."

We conclude our remarks, by strongly recommending this little book to our readers. The author has clearly shewn,

> "There are in thee,
> Instructive book of Nature! many leaves
> Which yet no mortal has perused."

The more we study and investigate the works of Nature, the more reason shall we have to admire the various demonstrations of the Creator's wisdom in the comparative order and harmony of each of them, however insignificant they may appear to us. We are led to see that the minutest things in nature are appointed to some particular end and purpose; and that the Deity is as conspicuous in the structure of a fly's wing, as he is in the foot of a horse, the hand of man, or in the bright globe of the sun itself.

The farther we carry our inquiries and researches into the book of Nature, the more shall we be delighted with its study; for K.

Poisoning with Arsenic.

Two men were lately examined at Bow Street, on a charge of poisoning a pair of carriage horses with arsenic. The animals had been suddenly taken ill, one of them died, and the other was with difficulty saved. On examining the dead horse, the stomach was found to be highly inflamed; and, by the application of proper chemical tests, arsenic was detected.

After much prevarication, the coachman confessed that he had purchased from a certain farrier (although peremptorily forbidden by his master to give medicine to the horses without his knowledge and sanction) something to destroy worms; and the farrier, after equal prevarication, confessed that he had given six grains of arsenic between them, in half a pint of oil. The druggist's apprentice was produced, who proved the purchase of six grains of arsenic by the farrier.

It was stated in some of the newspapers, that "a gentleman from the Veterinary College, who had been consulted on the case, had given it as his opinion, that this quantity of arsenic (three grains to each) was fully sufficient to poison any horse." It is in vindication of him (Mr. C. Spooner) that we allude to this case. This strange statement naturally carried us to the second examination of these men. Seeing Mr. S. there, we told him our object; in consequence of which he drew the attention of the magistrates to the circumstance; and they acknowledged their perfect recollection of his having said that it was, in a manner, impossible that this quantity could have done harm—that he had given sixty grains without destroying life; and that it was his firm opinion, that a very great deal more had been administered than the men chose to acknowledge. We perfectly agree with him in this opinion; and are glad to have this opportunity of correcting a report that would have compromised any man's professional skill.

Eventually the men were discharged, for want of proof that they had administered the drug with an intent to injure or destroy the horses.——Y.

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MR. YOUATT'S VETERINARY LECTURES,

DELIVERED AT THE UNIVERSITY OF LONDON.

LECTURE XLI.

The Ninth Pair of Nerves—the Glosso-Pharyngeus—an organic motor Nerve.

THE Lateral Column of the spinal chord appears in view on each side immediately posterior to the pons varolii. It is distinct from the very beginning in the human being, under the name of the *corpus restiforme*. The corpus olivare there separates it from the central column on the inferior surface of the medulla oblongata, and is in a manner interposed between the central and the lateral columns; while there is a distinct sulcus on each side, which unites at the base of the corpus olivare, and forms an evident furrow that can be followed along the whole course of the spinal chord. On the superior surface of the chord, and commencing within the fourth ventricle, there is also a line of demarcation between the central and lateral columns. In the solipede or the ruminant, however, there is no distinct corpus olivare, nor any sulcus on either side of it; but *the lateral column* is as evident, or more so. The sulcus between it and the central column cannot be overlooked; and the rounded head of the column is composed of the corpus olivare compressed and flattened out, with which the corpus restiforme is blended, and in which it is lost.

The Nerves from the Lateral Column.—From the sulcus between the corpus olivare and restiforme, in the human being, and from the anterior surface of the spinal chord and the front of the lateral column, in the same subject, but from the side of the rounded head of the lateral column in the quadruped, there arise three distinct sets of nerves which now demand consideration. One portion of the seventh (portio dura), the ninth or glosso-pharyngeus, and the tenth or cerebro-visceral motor nerve. The seventh, with its double root, I will for the present pass over: we are not prepared for its consideration. I will proceed to the ninth.

The Ninth Pair of Nerves, or the Glosso-Pharyngeus.—This has been usually described as a branch of the tenth, or cerebro-visceral, but it is perfectly distinct from it. The glosso-pharyngeus arises from the lateral column of the medulla oblongata, immediately posterior to the inferior root of the seventh. It consists of an uncertain number of filaments, generally four or five, small, arising in a line, approximating and uniting. Professor Mayo says that a small ganglion is formed upon them. Although I had not observed this until it was pointed out by that accurate anatomist (for it is a very small one), I am disposed to acknowledge its existence, and I regard the discovery of it as one of singular importance. This ganglion being formed, the nerve pierces the dura mater separately from the par vagum (as it used to be called, and with which it should never have been confounded), and is seen deep under the angle of the jaw. It passes over the internal carotid, "and runs," as Mr. Percivall well describes it, "forwards and downwards," giving branches to the styloid and digastric muscles—anastomosing with the cerebro-visceral and the accessory nerve—sending fibrils to the constrictor muscles of the pharynx—then dividing into other branches—anastomosing with the lingual nerve, and finally losing itself in the base of the tongue.

The Function of the Glosso-Pharyngeus.—Now, gentlemen, let us pause. We must tread cautiously here. Where do we find this glosso-pharyngeal nerve?—on the fore part of the corpus restiforme in the human being, that is, on the anterior (inferior) surface of the spinal chord, and therefore at once begetting the suspicion that it has a motor character; but in the quadruped, arising from the side of the head of the column—more equally and decidedly between the motor and sensitive columns of the spinal chord, and occupying a kind of border ground between them. What is its anatomical character? It arises by minute fibrils in a line, resembling a motor nerve; these fibrils pass through or form a ganglion like a sensitive nerve; and this ganglionic nerve with a motor origin is distributed over muscles or parts, some of which are already plainly and plentifully supplied with nervous influence from the cerebral or spinal nerves, while from others this influence is withheld or bestowed indirectly and sparingly.

The Portion of the Nerve belonging to the Tongue.—We call it the glosso-pharyngeal; belonging to the tongue and the pharynx. Now the tongue is plentifully supplied from the linguales and seventh pair,—nerves of voluntary motion,—and the fifth pair, a sensitive nerve. Although this nerve from the lateral column were taken away, there would be scarcely any part of the frame more lavishly endowed with nervous influence. But the muscles of the tongue are connected, in a more decided way than

many of the voluntary muscles are, with organic life, and with two of its main functions—digestion and respiration.

The Function of this Nerve as connected with Digestion.—The spinal and cerebral motor nerves are under the influence of the will; but before the understanding can be said to have existence, or a volition (the result of some mental act) can be formed, the animal requires nutriment; and he is guided to it, and to the reception and the disposal of it, unerringly and perfectly. The foal, the calf, the lamb, seek out the teat, and, with an accuracy on which the experience of after-existence cannot improve, extract and swallow the milk. The principle of organic life is in full power, and has been so long ere this; and we shall, perhaps, by-and-by, see reason to conclude, that these nerves from the lateral column are influenced by this principle before the will could issue its mandate, and likewise designed to call into requisition, and to controul and combine, the action of the voluntary muscles when, afterwards, the purposes of organic life require it. We are little conscious of the varied influence of the muscles of the tongue in the act of deglutition. The animal acquired the power of performing this organic operation without experience, and without mental exertion; and he continues to perform it, I will not say without an effort of the will, but in perfect unconsciousness of the various steps of the process.

This a Respiratory Nerve as it regards the Tongue.—The tongue is indirectly concerned with respiration;—not much, probably, in undisturbed breathing;—but when respiration is quickened, as in rapid progression, or from any other cause, we plainly see how much the motions of the tongue are influenced, and especially in those animals in which it is only slightly confined by the frænum. The tongue of the horse is somewhat closely tied down by the frænum, that it may constitute a convenient and firm cushion for the bit; but where it is freer, as in the ox, and especially in the dog, if the breathing is a little hurried, the tongue is protruded from the mouth, and, in the dog, is in constant motion. The connexion of this with the mechanical act of respiration has been explained in a former lecture.

Conclusion with regard to the Function of these Nerves.—Then I begin to form some idea of the intention and function of these nerves from the lateral column distributed to the tongue. They are designed to call into action, and to combine together, the muscles of the tongue for the discharge of two important functions, as well before the mind could determine their action, as afterwards, when it had power to do so, but was in a manner unconscious of what took place; and also when, under unusual circumstances, it was necessary to add another and a stronger in-

fluence, to produce their more powerful and consentaneous action. I can account for their decidedly motor origin in the human being, and for the rounded head whence they spring being in the inferior surface of the chord in the quadruped; for their function is that of motion. I can account for their sensitive ganglion, for it is necessary that there should be a sympathy and common feeling between all the parts concerned in the discharge of a certain function, in order that their action may be suited to the situation and wants of the animal; and I can understand the anastomoses of these nerves with those of the spinal chord, that this sympathy may be more extensive and stronger, and the consent of numerous muscles in the discharge of the appointed function more complete. I have, therefore, no hesitation in denominating it an *organic motor nerve*.

I must here differ a little from him whose track I have gratefully and cheerfully followed. I cannot call this a *respiratory* nerve, for the tongue is more concerned with *deglutition*, one of the processes of digestion, than it is with respiration. I term it an *organic motor nerve;* not in denial of the theory of Sir Charles Bell, but as comprising an extension of the influence of the nerve to other functions of organic life.

The Portion of the Nerve belonging to the Pharynx.—When you observe the mesh-work of nerves about the lower part of the face, and the larynx, and the throat generally, you can scarcely fail to remark how few, comparatively, from the spinal chord are given to the pharynx. There are two branches from the seventh which have considerable similarity to this glosso-phrayngeus, and which I shall in another lecture have to describe, viz., the *chorda tympani*, which, after performing its duty within the ear, takes its course to the tongue, and another branch which may be traced to the styloid muscles, and the dilators of the pharynx generally. The constrictors, however, seem to be comparatively abandoned, and the fibrils which they derive from the fifth, and the seventh, and the upper cervical, render them voluntary muscles to a comparatively insufficient and imperfect degree. The truth of the matter is, that that portion of the mechanism of deglutition with which the constrictors of the pharynx are concerned is performed instinctively, without the command and in defiance of the resistance of the will. When a portion of food has entered the pharynx, and dilated it to a certain extent, the constrictors begin to act and press it onward, whether we will or not. It is an instinctive act, and performed by the foal and the lamb as perfectly as by the adult animal. The pharyngeal branch of the nerve under consideration, is that by which this portion of the act of deglutition is effected. It is to a certain extent, as every vital action should be,

independent of the will, and with no indications of common sensation; yet the pharyngeal branch, and the muscles to which it is sent, are connected with nerves of voluntary motion, in order to force their alliance, and obtain their co-operation, under extraordinary circumstances: and also with those of sensation, to preserve a sympathy between the parts, and a consciousness of their healthy or morbid state of action.

I have dwelled the longer on this first of the nerves derived from the lateral column of the spinal chord; for if I have been enabled to give you some idea of its function, we may pass more rapidly over the others.

You will see still stronger reason for venturing to refuse to this nerve the designation of a *respiratory* one, for it is so only in an imperfect and indirect degree, and under unusual circumstances; and is more properly designated an *organic motor nerve*.

EXTRACTS FROM MY CASE-BOOK.

By Mr. W. Simpson, *V.S. Southampton.*

No. IX.

NEUROTOMY.

Oct. 1, 1833.—Early in the year 1832, two horses belonging to Sir William Heathcote, Bart. were admitted into the Veterinary College as patients, being incurably lame in the fore feet. The operation of neurotomy was performed upon both, by Mr. Sewell, below the fetlock; and, after a reasonable time, they were discharged, *free from lameness:* at any rate, in the regular trotting out they appeared to go quite sound. At the expiration of a few months after their arrival at Hursley Park, they were put to work, and certainly very great improvement was manifest in their action; in fact, no lameness was perceptible, and it was thought they were as efficient as ever. At length, however, after a little extra work, a trifling degree of tenderness was to be noticed, accompanied by a pointing of the affected foot. (Only one foot was lame in one horse, both in the other.) This sort of thing gradually increased: every day the lameness became more perceptible, until, at last, it was as bad as before the operation, and the two horses were nearly useless for every purpose, except the plough, &c. Being at Hursley to-day on other business, I happened to notice these horses, and was conversing at the time upon the very subject of neurotomy with Sir William, as regarded another horse of his. I had been explaining the different

effects of the high and low operations, and their respective applicability to individual cases, when he remarked, that the horses in question were almost ineffective in their present state, and asked me if (for the sake of experiment), I could see any objection to a repetition of the operation *above the fetlock*. After some little conversation, it was arranged that neurotomy should again be tried without loss of time; accordingly both horses were ordered to my infirmary at Southampton, to be immediately placed under preparative treatment.

14*th*.—To-day the patients were operated upon *above the fetlock*.

Nov. 10*th*.—Turned out into the park.

In January last the above horses were taken up, and immediately got into working condition. Neither of them have shewn the slightest lameness, but they appear to have as good use of their legs as though they were perfectly sound. How long this may continue it is not for me to say. With regard to the return of the lameness to so great an extent after the original operation, it becomes a question of considerable practical interest to ascertain the cause. Its gradual re-appearance would strongly incline one to think that it must have been brought about by a revival of the nervous function, either by means of anastomoses with some of the numerous neighbouring branches, or by a communication between the divided ends of the nerve. Inferring that a portion was actually excised, I should rather adopt the former proposition; and if that is really the case, it speaks volumes in favour of the high operation; because when the main branch of the nerve is divided, or a portion of it excised, the only way in which sensation can be re-established, is by the transmission of the nervous fluid along the course of the original trunk; anastomoses, in this case, being almost out of the question. This, however, is a point which dissection alone can render clear to us; but, as it appears to me to be of no small practical importance, I shall not let pass any opportunity of thoroughly investigating it.

No. X.

NEUROTOMY.

Dec. 18, 1833.—A very old but splendid bay horse, belonging to —— Lamprey, Esq. has been sadly lame in the off fore foot for some months. Endless plans of treatment have been adopted with him, but all have proved useless. To-day I was consulted about him, and as it was pretty clear that the day for setting him right had gone by, I recommended neurotomy. This was

acceded to, and the horse was ordered to undergo proper preparation.

26*th*.—A portion of the metacarpal nerve was excised on both sides, just above the fetlock.

March 14*th*, 1834.—The horse, being quite free from lameness, was put in harness and driven about twelve miles. He appeared to go very well; but, on arriving at his journey's end, it was found that the off hind hoof was covered with blood, and the heels of the neurotomized foot were dreadfully bruised and cut from repeated blows from the corresponding foot behind. To remedy this, the toe of the hind foot was ordered to be shortened as much as possible.

18*th*.—He was driven again to-day, but without the least diminution of the unpleasant and dangerous contusions, although he does not appear to feel the slightest pain either at the time the blows are inflicted, or when pressed upon and examined afterwards. Being nearly twenty years old, Mr. Lamprey decided to destroy him, rather than be at any further trouble concerning him.

This is a consequence of neurotomy which was certainly altogether unlooked for by me; but it is clearly caused by that operation, because previous to its performance there was not the slightest disposition to any thing of the kind, although the patient always had a lumbering way of going. It appears there was not the same activity in the affected foot as before the operation—it could not get out of the way of the hind foot; yet this is a thing which one would not expect, because, although sensation in the foot is destroyed, still the locomotive powers of the leg are unimpaired. Such, however, has been the consequence of neurotomy in this individual instance. Whether it be of frequent occurrence I know not; but such of your readers as have met with any similar cases would benefit their profession by narrating them. Although this is certainly an objection against neurotomy, still it ought to have no effect in deterring any practitioner from having recourse to it; because there can be no question between the decided and permanent inutility of an animal, and the mere distant possibility of a consequence like this.

No. XI.

GREASE.

March 2*d*, 1834.—An old horse of my own, which I have just bought, is troubled with virulent grease in both hind legs, to such an extent that he cannot move across the stall without catching up his legs in a spasmodic manner, and nearly falling

over. Ordered to be prepared for physic, and to have poultices of linseed meal, containing also a quantity of chloride of lime, to be applied to the affected parts, and to be continued for three or four days.

4*th*.—Physic purging. The heels are not so tender; but there is a profuse ichorous discharge. Ordered to be washed with soft soap and water, and afterwards to be covered with powdered chloride of lime. Mash diet.

6*th*.—The amendment is very great indeed; in fact, the discharge has ceased, and the tenderness is trifling. Continue the chloride of lime.

8*th*.—The horse seems quite free from grease, the only remaining signs being a quantity of scurf, which, of course, will soon disappear.

The only reason I have for transcribing the foregoing case is, once more to bring before the profession a notice of the chloride of lime. It is with me a most favourite medicine; and I am sure, if I can induce my brother practitioners to use it, they will agree with all my encomiums on its virtues.

Southampton, March 22, 1834.

ON THE EFFECT OF PURGATIVES ON CATTLE.

By Mr. J. D. Harrison, *V.S. Lancaster.*

In sending the following case, I am not actuated by any wish for a renewal of the controversy with Mr. Friend; but it being of an unusual nature, and the treatment failing, I am led to hope, that, although worsted in this case, I may be more fortunate should I chance to meet with more of a similar kind.

The subject was a small three-years-old heifer, and was never observed to ail any thing until the morning of the 16th of February last, when it was noticed that she had a quantity of very soft food lying upon the pavement before her, for the appearance of which the owner was unable to account until he had been with her a short time, when she vomitted a considerable quantity of a like consistence to that, which there cannot be the least shadow of doubt she had parted with in the same manner. In this dilemma, the advice and assistance of a neighbouring farrier was solicited, who bled her, and ordered the following drench to be administered at twice, allowing an interval of four or five hours between:—℞ Magnes. sulph. ℔j. aloes vulg. ext. ℥ss. pulv. zingib. ℥j. She had, during that day, thick gruel made of

boiled barley and linseed, frequently horned into her, all of which she regularly discharged through her mouth. The fæces, when voided, which she did in nearly as regular a manner as a cow in health, were not of harder consistence than those of other cows.

On the 17*th*, the vomiting had not in the least subsided, neither had the purgative had the desired effect; but the animal being a small one, the farrier did not venture upon again administering purgatives, but contented himself with ordering her to be frequently drenched with the gruel.

18*th*.—No improvement: she was again bled, and magnes. sulph. ℔j, pulv. aloes vulg. ext. ʒss, pulv. zingib. ʒj, were administered. In the evening, as no purgation had ensued, one quart of olive oil was given in some gruel.

19*th*.—No amendment; neither had the medicine operated.

On the 20*th*, the owner applied to me; when, after stating as above, I came to the conclusion that the first and second stomachs were the parts principally affected, though I did not doubt the third also being so, if merely from sympathy; and, finding that purgative medicines had not produced any sensible effect, I resorted to stimulants, and sent the following draught:—℞. ol. terebinth. rect. ʒiv, sp. æther. nit. ʒiii, tinct. opii ʒj, one-half to be administered immediately upon the owner's arrival at home, and the remainder in the evening; and, in the interval, ℞. magnesiæ sulph. ℔j, sulph. sublimat. ʒviii, aloes vulg. ext. ʒss, pulv. zingib. ʒij.

On the 22*d* I received a note, stating that, after the exhibition of the first dose of the stimulant mixture, she had ceased vomiting; that he, the owner, had given the other, according to my instructions; that purgation commenced on the morning of the 21st; that she was then briskly purging, and appeared to be almost free from fever.

Under the then existing circumstances, I felt myself warranted in a continuance of the stimulant treatment, and sent a similar mixture to be given at four times, allowing an interval of three hours.

The cow died on the 24*th*; but, not being present, I can only send you the farrier's account of the post-mortem appearances, which is very brief.

The rumen contained a large quantity of the boiled barley and linseed; the maniplus was full, hard, and dry, amongst which barley and linseed were prominent. It may not be superfluous for me to state, that she purged until death took place; and that they were not able to detect any of the medicines given by the farrier amongst the vomited mass.

In making any observations upon the foregoing case, it will be necessary, before hazarding any opinion which might lead to a false pathology, to take the symptoms as they presented themselves, and from them to draw a conclusion as to the part disordered; and if the one I have formed be correct, viz. The first and second stomachs being primarily, and the maniplus sympathetically, affected, it will throw some light upon the effects of purgatives on them; for if it be allowed that the purgatives which were first administered were at once directed into the rumen, and even allowing them to have been thrown out thence by vomiting, yet as that did not immediately ensue after administration, it at once clearly proves them to possess no direct influence over that organ, or some sensible effect would have been observed and produced, as was plainly exemplified in the very first dose of a stimulant. If it should, on the other hand, be urged that they did not enter the rumen at all, but were passed onward to the abomasum, purgation would to a certainty have taken place in an earlier stage of the disease, the intestines not being very torpid, as was evidenced by the almost regular voiding of the fæces.

Another proof of the inefficacy of purgatives is, to me at least, conclusive; that the salts, &c. ordered by me must have entered the rumen, for I think no one will attempt to deny that the stimulant mixture did so; and it would be preposterous to suppose that the rumen could have the power of rejecting one whilst it received the other, such a short time intervening: then why, after four days' brisk purgation, do we find, upon a post-mortem examination, that the maniplus was filled with a hard and dry mass? Upon looking at all the circumstances of the case as they occurred, I must confess that I am unable to give any self-satisfactory answer as to the *modus operandi* of the medicines administered.

FATAL EFFECTS OF A SLIGHT WOUND IN A BULLOCK.

By Mr. J. Hawthorn, *V.S., Kettering.*

On Dec. 9th, 1833, a brawn gored, with its tusks, an aged mare on the thigh; but she did well; and a bullock across the knee-joint, and so completely laid it open, that it was necessary to destroy him immediately. He also gored another bullock in a slanting direction in front of the near-hind-fetlock joint. The brawn was kept some time afterwards, and nothing unusual was

observed about him. The wound in this second bullock was not deep, nor above two inches long, and was going on very well until yesterday, the 16th, when he seemed to have no pain in the wounded leg, but a great deal in the off hind leg, which he was often lifting up. He refused his food, and champed his jaws sharply together at times, with twitching of the head, pulling it on one side, and a great deal of frothy saliva was discharged from his mouth.

I did not see him until to-day, the 17th; it was distressing to witness his sufferings. The pain had returned to the wounded leg, and he frequently held it up and forwards. The wound was dry, the leg not swelled, and, when not lifted off the ground, he stood on it as well as on the other leg. The paunch was as much swelled as in a beast badly dew-blown or hoven. He was continually champing sharply; his lips were covered with saliva; there were spasmodic twitchings of the head to the near side; and he was frequently rubbing the near side of his head against the tops of some boards. He had rubbed the hair quite off that side of his head; and, on the same side, the mouth, cheek, and eye, were very much swelled. He did not at all rub the other side, so that the two sides presented a remarkable contrast.

I considered it to be a tetanic affection of one side of the nervous system, arising from the wound in the fetlock joint, or a translation of inflammation from the wound to the brain and nerves on the same side.

He was fastened by his horns to a post, with his head a little elevated above his body. The paunch was then punctured, and the distention got rid of. He was bled to the amount of seven quarts, being a large fresh bullock. The champing of his mouth ceased. He strained violently, as if trying to dung. I gave gave him aloes ʒvj, and six drops of the croton oil. I was then going to clyster him, when I saw his off eye sink in his head (the near was closed before by the swelling). I thought him fainting. He dropped on his hind parts. We let his head down, and in a few minutes he died without a struggle.

The case was desperate at first, and no one was surprised at the result. The bullock never tried to toss at any thing. He took no notice of fresh objects, and was not agitated by blows on the horns with a stick. There was no stiffness or rigidity of the limbs or the body, and, after the paunch was punctured, he moved about the place as well as another bullock would. He seemed wholly occupied with the pain in the near side of his head, except when, occasionally, the wounded leg was lifted up.

A CASE OF SHOULDER LAMENESS.

By Mr. GOODWORTH, *V.S.*

A BAY horse, the property of Mr. Parrot, of Driffield, had been at plough, on the 25th day of January last, for the first day after having had a long rest. He proceeded well in his work until the time of coming home, when, after he had got upon the road, he appeared to make a false step, and immediately became lame. He was brought home, a distance of two miles, and I was afterwards sent for to examine him. He stood apparently as if nothing was amiss; but when I ordered him to be moved, and as he took his leg up and set it down, and the weight came upon the point of the shoulder, that part evidently appeared to leave the ribs, and not as if there were a dislocation of the joint or an affection of the flexor brachii muscle, because he could distend the leg as if nothing was wrong, and the altered position of the limb only appeared to take place when the weight came upon it.

I thought the best plan I could adopt would be to keep the horse still, and to have a cooling lotion frequently applied to the part.

26*th*.—There was no inflammation about the limb, but the lotion was still applied.

27*th*.—I bled him in the shoulder vein to the amount of ten pounds, and gave ʒvj of aloes Barb. in solution.

28*th*.—The horse was purged, and the lotion applied to the shoulder as before.

29*th*.—Lotion continued.

31*st*.—Lotion applied as before. I had him moved, and found a little amendment.

Feb. 1*st*.—I thought it advisable to blister the shoulder well. The blister ointment was used, and it took very good effect. I let him stand a few days, and did not stir him. I afterwards found, when I took him out of the stable, that he had much less lameness. He ultimately became sound, and in the beginning of March was put to work again, as well as ever. I thought this a novel case, which induced me to send it to you, that it might be added to the valuable fund of information which THE VETERINARIAN contains.

ON DIVISION OF THE FLEXOR TENDONS, &c. &c.

By Mr. W. YOUNG, *V.S. Muirhead of Garnkirk, N.B.*

As I have been benefitted by the perusal of your Journal, and have at heart a wish for its prosperity, I beg leave to transmit the following cases. There is much prejudice existing among medical men, either considered as practitioners of the human subject, or of the lower animals. It is quite common for human surgeons round this district to declare that certain operations in veterinary surgery are quite impossible; while a few, better instructed, confess that they have seen and assisted to perform analogous operations on the human subject. My allusion is to division of tendons. One surgeon, near this place, declares that he has witnessed seven cases of division of the tendons of the wrist in the human subject, all of which did not succeed alike, but that in one of them, of which to this day he has a knowledge, the patient has a permanently useful hand. Having divided the flexors of four legs during the summer of 1833, I will briefly relate the result of them. Our brother practitioner, Mr. J. Holford, related one case in THE VETERINARIAN for March, 1834, in which his hope of permanent benefit was disappointed. Let him not, however, think that the only cases performed on this side the Tweed were those by our worthy professor, Mr. Dick; for, from ten to twelve miles north of this, numerous cases have been performed by blacksmiths with uncommon success.

CASE I.

On the 28th of May, 1833, I was requested by Mr. D. Gillies, Innkeeper, Auchinstairy, to look at a bay pony that had become knuckled over for a considerable time, and that was now useless. Both forelegs were affected at first, but the near-side one had returned to its natural position. The off fore leg remaining quite over, I gave it as my opinion, that a division of the tendons was the only means of cure. The owner replied, that he knew a horse on the banks of the Forth and Clyde Canal had been cured by Mr. A. Herriot, V.S. Falkirk. Before the operation he could scarcely put his toe to the ground, but was only out of his work about two months, and was now quite straight and free from lameness. He therefore consented to my operating on the pony.

The mode of operation I consider to be well known. After performing it, I, at first, only applied tow smeared with digestive ointment, and a broad bandage of old stocking. After three days, I used a solution of sulph. zinc. and liq. plumb. acet. At

the operation, a flat shoe was on the foot, and I could not tell whether a lever or high heeled shoe would be needed. I therefore left orders to watch the position of the leg; to get a shoe to suit it; if it appeared too long, a high heeled shoe; if too short, a lever shoe. Being distant from this place about six miles, I did not see the patient for four weeks; the wound was then healed, but the leg and foot were nearly as I left them on the day of operation. I procured a very high-heeled shoe, and shortened the toe as it was very much overgrown. This had a decidedly good effect. The shoe was kept on for about two months afterwards, while the horse was at grass; then a medium-heeled one substituted for a few weeks. The case was now going on well, the leg quite straight, but in certain positions there seemed to be much concussion, and it rather yielded. It, however, daily got stronger, until September 10th, 1833, when it was sold at Falkirk market. There was then no material difference between that and the other leg; and he went to Galloway, so that I heard no more concerning the case.

CASE II.

On the 28th of June, 1833, I was requested by Mr. R. Hamilton, farmer, Campsie, to come and cut the leg of a horse, which had been strained in the back tendons, about nine months previously; and had been treated by an empiric in Glasgow, who boasts of superior knowledge to any veterinarian, but all whose fancied skill was here baffled.

The off-side fore leg was the subject of operation. There was much contraction of the hoof and flexor tendons. He was made to stand upon the foot, unshod, for three days; and the wound was then dressed with a solution of chloride of lime, and kept firmly bandaged. A shoe with rather higher heels than common was all that was used in this case. After three weeks, the wound was healed. The horse walked tolerably well, and was sent to grass. After three months he worked occasionally, and after the fourth month he was put to daily work, in cart and plough alternately. I saw him at plough March 27th, 1834. The owner was present, and declared that he had worked as well and was as strong as any of his other horses, and the more he had worked him the stronger he had grown; and that he was glad that such improvement was made, for many horses had been as useless as his was until cut. The horse is as good as ever he was, and is only eight years old.

CASE III.

On the 28th of August, 1833, I was requested by Mr. W. M'Lauss, miller and farmer, of Campsie, to examine a black mare, which had been previously labouring under a chronic case of quittor, and which had produced ossification of the lateral cartilage of the near side fore foot, anchylosis of the fetlock joint, and contraction of the flexor tendons; and these to such an extent that the toe of the foot would not come in contact with the ground. This leg had been extensively cauterized some time back, in order to remove its chronic diseases.

This case being attended with a compound of disease, but little hope was, in reality, expected from the operation. She was operated upon and treated in a manner similar to the last; and I did not see her till about three weeks after the operation. She was standing very straight upon her leg, indeed as straight as upon the other one; but she was evidently weak upon it. She had a high-heeled shoe on that foot. The wound was healing kindly. At the end of five weeks she was going on very well. The owner then thought that he would work her, and put her in harrows on soft land. Being a heavy mare, about fifteen hands high, she sunk very much, and never went well again. The owner disposed of her about two months ago.

It was not giving either me or the case a fair chance, to work her at the end of five weeks, when I had told him positively that two or three months would be required before she should be worked.

CASE IV.

On the 12th of September, 1833, I was requested three times before I could conveniently answer the call, by Mr. J. Dickson, farmer, Campsie, to come and cut the leg of a horse, as it is generally termed in this part of the country. The patient had been cauterized extensively round the coronet and posterior part of the off fore leg, which was much thickened round the tendons, and so much contracted that he could only put the tip of the toe to the ground. He was operated upon and treated as in the former cases.

Did not see him again until after two weeks. The leg was much swollen, with a considerable discharge from the wound. I was told, at the end of five weeks, that the wound was nearly healed and looking well; and that, at the end of nine weeks, he was drawing in the cart occasionally, and that after three months he worked regularly. I saw him on the 27th of March, 1834. The leg is still thick as before the operation, but straight; and he

goes with the foot in the natural position. The owner said he was as strong on the cut leg as on the other, and had many times, within the last two months, thirty hundred weight behind him; and he thought the more he worked, the stronger he had become.

In conclusion, I would observe, that he would certainly be considered worse than a madman who performed any operation from which he expected the result to be always favourable. The above cases, being from five to eight miles distant from this place, and being partly dressed by the owners and partly by the smith who put on the shoes, were undertaken at a disadvantage; and it will be obvious to every one that they ought to be daily under the eye of the operator; yet three out of the four succeeded. In my humble opinion, the position of the foot, and compression by bandages after the operation, constitute the only mystery in this operation; but I would not perform it unless the animal was previously useless, or had some measure of youth and value as a hope of reward to the owner and operator. I only remark, that all the cases I have operated on were fore legs.

ON THE DUTY, PAY, AND ALLOWANCES OF A VETERINARY SURGEON OF THE INDIAN ARMY.

By Mr. G. Skeavington, *V.S., Devonport, late V.S. of the Bengal Horse Artillery.*

Messieurs Editors,

I, perhaps, ought to apologize for introducing subjects so devoid of amusement to the greater part of the profession; but as I write merely for the information of those who peruse these pages, I have no other plea to offer than that of my being most truly anxious to contribute my humble endeavours, along with the many of your very able correspondents, in rendering The Veterinarian such a source of knowledge that your subscribers may from thence be enabled to know how to act in certain particular cases. First, then,

Regulations regarding the Duty of Veterinary Surgeons attached to Cavalry Regiments or Brigades of Horse Artillery.

Art. 1.—The veterinary surgeon has the care of all the sick and lame horses of the regiment or brigade, and the particular superintendence of the *shoeing*, to which he will pay *unremitting attention*. It is also his duty to bring under the notice of the officer commanding the regiment or brigade any circumstances which appear to him of material consequence to the general

health of the horses, and immediately to report to him any appearance of glanders or farcy, or any other contagious disease.

Art. 2.—The veterinary surgeons will deliver to the commanding officer, every Monday morning, a report of the sick and lame horses under his care; and will certify, at the foot of it, that during the week he has *inspected every horse* in the stables.

Art. 3.—Any horse that is taken ill is to be immediately reported to the veterinary surgeon; and officers commanding troops are expected to give him all the assistance in their power, and strictly to enforce obedience to his directions. It will rest with the veterinary surgeon when to order a sick horse to the hospital stable, which is entirely under his charge, and no horse is to be removed from it to the lines but by his order.

Art. 4.—The veterinary surgeon is to keep a book, which will contain registers of his practice in cases of sick and lame horses, and of the measures which are adopted when any contagious disease makes its appearance, specifying the remedies, or mode of treatment, and the result of such treatment.

Art. 5.—*The veterinary surgeon will take pains to instruct the farriers in the proper mode of paring the horses' hoofs, and of shoeing.*

Art. 6.—The veterinary surgeon will also take frequent occasion to instruct the farrier-major and the farriers of troops in the common operations of veterinary surgery, as well as to point out the nature of his practice in ordinary cases, that they may know how to treat the horses of their troops when they are detached from the head quarters. To assist them in attaining this knowledge, they are to be provided with a book, in which they will register the several cases of the horses in the hospital stable, noticing the symptoms and the treatment adopted by the veterinary surgeon; he will frequently inspect these books, and see that they are correctly and distinctly kept.

Art. 7.—The veterinary surgeon will attend all committees for the admission of horses, and will sign the proceedings, as attending the committee in testimony that he has examined the horses, and is satisfied that they are sound.

Art. 8.—The veterinary surgeon will also attend all committees assembled to cast horses of the regiment or brigade to which he is attached, and, before the assembly of the Annual Casting Committee, he will submit to the commanding officer a roll of the horses which he thinks ought to be presented to it.

Approved by his excellency the commander in chief, and ordered to be circulated to the cavalry regiments and brigades of horse artillery.

CHRIS. FAGAN,
Adjutant-General of the Army.

I will now let you see, Messieurs Editors, the pay and allowances of a veterinary surgeon, so that no person should be misled who are desirous of being transported to India, as I know nine out of every ten are who have gone out.

Pay and Allowances of Veterinary Surgeons.

No. 198, A. of 1827, With reference to General Orders, No. 31, of the 9th of February, 1827;—The Vice-President in Council is pleased to lay down the following Scale of Pay Allowances for Veterinary Surgeons on this Establishment, in accordance with the Instructions of the Honourable Court of Directors, communicated in their General Letter, dated 6th September, 1826:—

		Rs.	As.	P.
Pay for any Month.	1st Class Veterinary Surgeons, above 20 years' service, 15s. a-day, or per month Sonat Rupees	182	10	0
	2d Class, above 10 years, 12s. or ditto	146	1	6
	3d Class, above 3 years, 10s. or ditto	121	12	0
	4th Class, under 3 years, 8s. or ditto	97	6	5

Here, Messieurs Editors, you have a scale of the pay per month in Sonat rupees reduced into Sicca rupees, which are the acknowledged coin by government, though they calculate in Sonats and pay you in Siccas, which reduces the number five per cent. Now for the allowances; first,

	Rs.	As.	P.
Full Botta, per month, Sonat Rupees	121	12	0
Full Tentage, ditto ditto	50	0	0
Gratuity (from Lord Clive's Fund)	24	0	0
Horse Allowance	47	13	3
Palanquin Allowance	30	7	0
	274	0	3
All Stations not being on full Botta, we then deduct for half Botta	60	14	0
	213	2	3
Add to these the 4th Class pay	97	6	5
	310	10	0

You will perceive, Messieurs Editors, the gross allowance for a month is 310 rupees, 10 assets. I will now shew you the nett amount:—in the first place there are two funds, to which government obliges you to subscribe; the first is the military fund, to which you pay 5 rupees per month, and a donation of 180 rupees, which your clear off monthly, at 15 rupees: this is a single officer's subscription; married officers have 10 rupees to pay monthly, and a donation of 360 rupees at 30 rupees per

month. The other fund is the orphans, to which you subscribe 3 rupees per month. Well, then,

	Rs.	As.
The Gross Pay and Allowances are, per month....	310	10
Subscription to Military Fund ..... 5 rup. } Ditto Orphans ditto ..... 3 do. }	8	0
	302	10
Reduce Sonat Rupees into Sicca Rupees at 5 per ct.	15	2
Total nett amount per month for the first 3 years .. nearly 24s. per day.	287	8, or

The horse and palanquin allowance will be drawn under the same rules that govern the claims of assistant surgeons of cavalry corps, that is, when on actual duty. Veterinary surgeons will be intitled to the indulgence of boat allowance on proceeding to join a regiment on their first arrival in India, as prescribed, if ordered within eight months of their arrival. The Honourable the Court of Directors having ordered that veterinary surgeons are to be supplied with professional instruments from the public stores, the requisite articles are to be issued to them gratis from the medical depots on indent, previously sanctioned by the medical board. The instruments thus furnished are to be considered public property; and, as such, a quarterly return of them is to be made by the veterinary surgeons, respectively, to the medical board; and they are to be entered on the returns of the quarter-masters, to whose custody they will be entrusted whenever a veterinary surgeon quits a regiment, without being regularly relieved at the time by a successor.

When any of the instruments are worn out, or become otherwise unserviceable, they are, after survey, to be replaced by indent, presented and attested in the prescribed form, and countersigned by the commanding officer of the corps, previous to transmission to the secretary of the medical board.

Veterinary surgeons being authorized to indent on the medical stores for such medicines as they may require, strictly applicable to the public service, the cost of them is, in the first instance, to be placed to the debit of the veterinary surgeon, who will be held responsible to government; but, as officers in command of troops draw a monthly allowance for each horse, for the express purpose of supplying, amongst other articles enumerated, proper "musalahs* and physic," the bill of charges for veterinary

* As the natives of India like hot curries, I suppose the horses also would like something warm; consequently there is an order that all horses shall have *a treat* of musalahs (Indostanee spice) whenever the commanding officer shall think they require it, once or twice a-week; and it was generally composed of salt and pepper in equal parts. I scarcely need say I did away with this in the troop to which I belonged.

medicines furnished on indent from the public stores, for the use of a mounted corps, is to be paid by the veterinary surgeon before the commanding officer, who will cause him to be reimbursed by officers commanding troops, apportioning the amount of the charges to be adjusted by each, and collecting it through the regimental staff.

All indents prepared by veterinary surgeons are to be in due form, and to be countersigned by commanding officers of corps respectively, previous to transmission to the medical board.

As I shall not have space for the whole of the information relative to the Indian army, I must beg to continue or conclude it in my next.—I will now relate, if you think proper to insert it, an anecdote that may be amusing, and will serve to shew you a touch of the old school. About two months ago I was sent for to see a horse belonging to G. M. Gifford, Esq., who was residing with a friend about five miles from this town: after examining the horse and prescribing for him, we adjourned to the house, where, over a bottle of wine, he related to me a circumstance which had occurred to him some time in the month of October last. Mr. G. was on a visit with a friend near Launceston; and a pack of hounds in the neighbourhood, though they were harriers, induced him to have a day or two's sport with them; however, Mr. G.'s horse was, unfortunately, on one of the days, not well, and he declined riding him: the gentleman with whom he was staying did not like to see Mr. G. disappointed (for I assure you, Messieurs Editors, Mr. G. is one of the right sort, and will get across a country if there be any chance—excuse me digressing a little); however, Mr. G.'s friend lent him a horse, and out he went. The hounds soon found and on a good scent, for they went at a slapping pace, Mr. G. clearing every thing he came to with his friend's horse in good style; but on coming to a bank composed of stone and mud, the horse did not clear so well with his fore legs as he ought to have done, and down he went, neck and crop, pitched upon his head, and died immediately; Mr. G. finishing *his* day's sport with the pleasure of carrying home his bridle and saddle between three and four miles. During the recital of this anecdote a servant announced the arrival of Mr. ——, farrier, who lives not quite one hundred miles from Launceston; he was shewn in, took a seat and some grog; and Mr. G. continued his tale, at the conclusion of which, Mr. G. asked the Launceston farrier (who, by the by, is in great practice) several questions as to what was the cause of the horse dying so soon, but nothing satisfactory could be elicited: however, after moistening his clay with two or three glasses of rum and water, he began to open more freely. Mr. G.,

having a good deal of wit and humour in his composition, was able to prolong the conversation without a smile; at length he asked "the farrier" what he would recommend, when professional aid could not be immediately called in, in a case where the "*vital spark was extinct.*" The farrier looked more serious than usual, and said "*the case was a bad one, very bad one, but he would recommend to bleed freely, and send for him as soon as possible!!!*" Now, Messieurs Editors, this was too rich: my hand almost refused to convey my last glass of wine to my lips, my sides were convulsed, and it was with difficulty I *decently* escaped from the room to enjoy a hearty fit of laughter. Yet, with all this well-known ignorance, this same fellow has an excellent practice, and his charges are higher than the regular veterinary surgeon.

ON CASTRATION, AND THE CASUALTIES ATTENDING THE OPERATION.

By Mr. THOMPSON, *V.S., Beith, N. B.*

AMONG the numerous difficulties which the country veterinarian has to encounter there are none that hurt his character or blast his reputation more than a case of unsuccessful gelding. He has a colt of more or less value put into his hands, perfectly sound and healthy. He performs the operation on the most scientific principles; every thing appears to be going on well; very little swelling is observable; a slight discharge of matter from the wound takes place; and in the usual time the wounds are nearly healed: but, occasionally, a great degree of swelling and inflammation, unexpectedly to the owner, now commences: the legs become stiff and swollen; the anasarca extends along the belly and chest; the spermatic cords are more or less enlarged; an extensive suppuration takes place, which bursts generally about the flank; and with some trouble to the practitioner, and some grumbling from the owner, the animal, although much debilitated, generally recovers.

In other cases, which are comparatively more rare, instead of a healthy suppurative process, fistulous sinuses form. The whole spermatic chords, scrotum, and sheath, are converted into a hardened scirrhous mass. The animal sinks rapidly in condition; and fistulous abscesses are, probably, bursting in various parts of the sheath. In this condition the colt may survive for months, until wasted to a skeleton. Inflammation of the peritoneum succeeds, effusion takes place both in and under the belly, and the patient, now sunk beyond recovery, soon dies.

The cases first mentioned proceed from something obstructing the free discharge of matter; while the other appears to arise from pressure of the spermatic cord, by applying the clams too tight; at least, the following case appears to be so.

In the spring of 1831, I gelded a one-year-old half-bred colt, the property of Robert Stewart, Esq., Low Bank, Strathearn. Being fond of new methods, I applied the caustic clams. The case appeared to be doing well till about eight days after the operation, when I saw protruding from the scrotal wound a tumour about the size of an egg. I suspected that pus might be contained in its centre. It was punctured, and bled plentifully. In the course of another eight days I saw it again. It was now protruding eight inches from the scrotum, and was, in circumference, about nine inches. Being considerably alarmed at its appearance, I advised the proprietor to have the animal thrown, and the tumour cut off, and to this he assented. I proceeded to open the scrotum, and detach the adhesions which had taken place to the surrounding parts; I then cut off the tumour as deeply as possible. The hemorrhage was excessive; but I succeeded in arresting it by the application of the cautery. The remaining portion of the cord was destroyed, as far as it could be, by firing it with a hollow iron in the form of a cup. A healthy suppurative process now began, and in a few days the cure was complete.

The excised portion of cord was examined after the operation. Its arteries were greatly enlarged in caliber; the part where the clams had been fixed was cartilaginous, and the cellular membrane, both above and below, was fast approaching to the same state. In the newly formed part of the tumour, the arterial ramifications were exceedingly numerous; and if the tumour had not been cut off, it might have grown to a very large size, and, probably, would have destroyed the animal.

Another case of diseased cord came under my notice in the same year. Ligatures had here been used in tying the arteries, and the cords did not protrude out of the scrotum. I advised the excision of the cords, but in this I was overruled by the country gelders and farriers of the neighbourhood. The animal gradually sunk in condition; the sheath became enormously swollen, with numerous fistulous openings upon its surface; and the colt died in three months after the operation.

Another very bad case came under treatment in the summer of 1833. The colt belonged to Mr. Thomas Kirkwood, of Drumbuoy. It was three weeks after it was gelded before I saw the animal. I felt the cords in the same hardened state as in the

last case; both being within the scrotum, and they could be traced into the abdominal ring. I advised the proprietor to have them extracted; he, however, demurred, and sent for the gelder and another veterinary surgeon, who, I am sorry to say, had not the common courtesy to call upon me and consult on the nature of the case, although he acknowledged he had seen nothing of the kind before. Both of them agreed, that to perform an operation such as I proposed, would be certain destruction to the animal.

The proprietor told me what had passed. I replied, that as I did not castrate the colt, I was quite easy about their determination; but I assured him that, if the operation was not done, death would be the consequence. Six weeks more passed, during which I frequently saw the animal. Several lotions, liniments, and ointments, were directed to be applied to discuss the enormous swelling, or encourage suppuration. It did suppurate now and then, but this only added to the hardened mass, and formed more fistulous openings. The proprietor now lost faith in his other advisers, and, at last, assented to my proposals, as he said *the beast was dying any way*. But what inducement had I now to operate, or what hope to succeed? The case at this period would have made the most daring one consider before he proceeded to use the knife. The poor animal was wasted to a skeleton; the back was roached; an œdematous swelling extended along the under part of the belly and chest; the scrotum and sheath were of enormous size; in short, they formed a hardened scirrhous mass with numerous fistulous openings on its surface. No trace of the spermatic cord could now be found, and the animal for some days past had shewn symptoms of *peritonitis*.

Being, however, urged, I proceeded, and threw the animal. An incision was made in a line from the abdominal ring to the most pendulous part of the sheath: but this incision could not be made to open; I might as well have attempted to separate a piece of sole-leather. I was, nevertheless, determined to see the centre of this mass, and another incision was made about $2\frac{1}{2}$ inches from the former, and each was carried on to the depth of 3 inches, and the intermediate portion removed. No cord was to be seen; it was all a hardened mass, which crackled under the knife like cartilage, yet full of fistulous openings. The same operation was performed on the other side, and the same appearance was presented. The bloodvessels of both were secured, and the gaps in the sheath allowed to remain open as a drain, through which the fluid might discharge itself, which it did for several weeks afterwards, along with large quantities

of yellow lymph, that often hung in strings half way to the ground. A change for the better immediately took place. The swellings on the belly and chest and the symptoms of peritonitis disappeared in four days. The lips of the wounds gradually approached each other, and united, and the colt is now in excellent condition. The sheath is whole, but larger than in its natural state, and will continue so as long as the animal lives.

DESCRIPTION OF A SHOE FOR THE COMMUNICATION OF FROG PRESSURE.

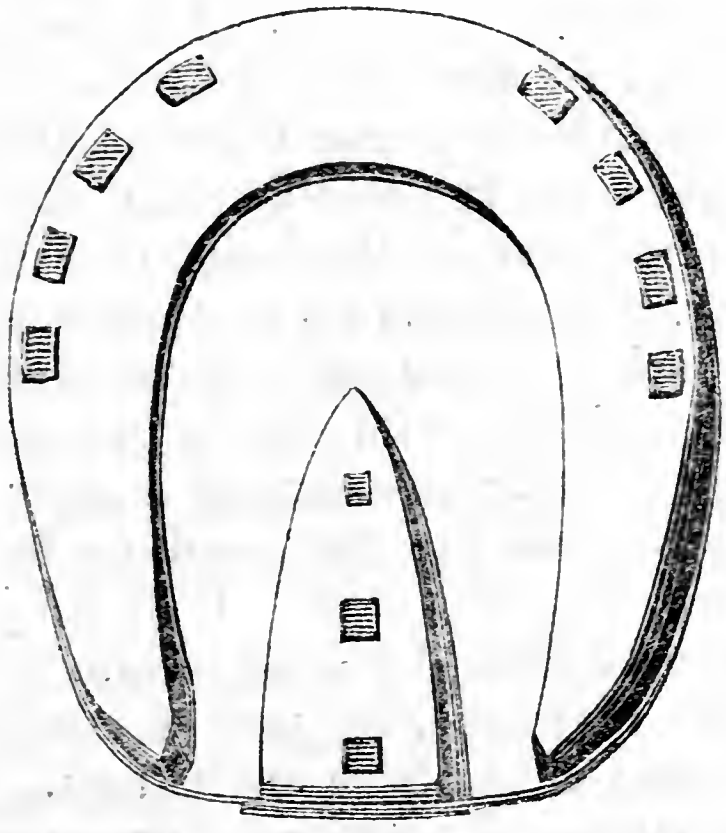
By Mr. FRIEND, *V.S., Walsall.*

IN presenting you with the shoe which accompanies this, I beg leave to state to you, that, previously to using it in my own forge, I had never seen or heard of such an one by any chance; and though it is possible that such a shoe may have been used by other practitioners, yet I assure you it was with me a decided invention: and unwilling as I should be to arrogate to myself the merit of a discovery which to some individuals may not be new, yet, as I consider that I have seen considerable advantage derived from its use in my own practice, and as I am convinced that it will be entirely new to the greater part at least of the veterinary public, I feel glad to be able (through your kindness) to offer a description of it to my professional brethren; and I assure you, that it is with very great pleasure that I attempt to repay, in any slight degree, the benefit I have derived from numbers of them, through the medium of THE VETERINARIAN.

I believe it will be universally admitted that there are a great many cases where it is essentially necessary to give pressure to the frog; and that this can scarcely be done, in a variety of instances, without resorting to means more artificial than is afforded by the use of the common shoe. That excellent physiologist Professor Coleman particularly has seen the need of this; and with the view to give this necessary degree of pressure under all circumstances, he invented a shoe which is well known to all veterinarians as his patent frog-shoe. Now, as I consider it necessary in some measure to contrast the one before you with that invented by him, I beg leave to preface my remarks by observing, that I entertain the highest possible respect for Professor Coleman; that I disclaim the most distant idea of placing myself in competition with him; that I offer this shoe as the result of an attempt to improve upon a principle I am proud to acknow-

ledge having derived from him; and that I claim the place only of a humble follower of so distinguished a practitioner.

It will be well recollected, that the frog bar of the shoe of Professor Coleman (by means of which he proposes to give the necessary degree of pressure to the frog) is welded to the toe of the shoe or tip, whichever is employed, and that it, in fact, forms one piece. In consequence of this, except there is an uniform degree of pressure on all parts of the surface presented to the ground, one part is tending to derange the other. Now in the shoe before you, you will perceive that there is no direct attachment between the shoe and the frog-bar: the means by which the frog-bar is kept in its situation is by the use of a leather sole, to which the bar is rivetted; and thus the pressure to the crust by means of the shoe is not at all affected by the frog-bar, nor is the pressure given to the frog at all interfered with by the shoe. Each part has its distinct and proper action; any required degree of pressure can be given to the frog; the descent of the sole is not prevented; and any shoe (that for other reasons it might be advisable to adopt) will be equally well adapted here; and, if I might presume to borrow an idea from the Professor, "nature is more closely imitated."



Another disadvantage that this shoe is intended to obviate is, that it is not likely to be pulled off by the hind foot striking the frog bar; in fact, the leather will give way to such an extent in this case, and there being no positive attachment of the bar of the shoe, renders this a circumstance hardly possible to take place; whereas I have found it one of very frequent occurrence in the use of a shoe with the frog-bar welded to it.

In brief, it will be seen, that this shoe is proposed as one calculated to give pressure to the frog to any required extent. In order

to effect this a bar of iron, in the shape of the frog, is rivetted to a leather sole; and to vary the degree of pressure, any number of piles of leather, of the same shape, may be placed between the bar and the sole, and between the sole and the frog. In the shoe sent you, there is one pile under the leather sole, and one between the sole and the frog-bar, which bring it perfectly level with the under surface of the shoe, and give equal bearing to the crust and the frog; but as I said before, the adding to or diminishing the number of the piles of leather will enable us to vary this degree of pressure to any extent.

It is a form of shoe, too, which may be adopted under ordinary circumstances: it is not necessary that the animal should be at rest during its use, nor is it one that requires a continuous attention on the part of the veterinary practitioner; the proper adaptation of it in the first instance, and the careful attention to symptoms on its removal, being all that is requisite on his part.

As in adopting this shoe, it becomes absolutely necessary to employ a leather sole, I beg leave to offer a remark or too on the use of it. I am clearly of opinion, that there are no circumstances under which it becomes necessary to give pressure to the frog by artificial means in which the use of the leather sole, properly applied, will be prejudicial. Of course, it is necessary that the sole and frog be first well covered with tar, and as much tow applied as will perfectly prevent the possibility of small stones or gravel getting between the leather and the horny sole; and I am sure all who have been in the habit of using soles, will bear me out in asserting, that there is no system of stable management under which the sole will be more beautifully elastic, on the removal of the shoe, than under this treatment. There is less concussion also, by the circumstance of leather being interposed between the iron shoe and the foot, and no bruising of the sole or frog by loose stones on the road. I would just add, that it is necessary that the shoe should be fitted out larger than if it were to be applied to the bare foot, by just so much as the thickness of the leather will add to the base of the foot. I do not mention this for the information of veterinary surgeons, but simply to remind them, that as many of them have repeated occasions to give instructions to various smiths, it is equally needful to give them plain directions on these heads.

I do not think it at all requisite now to enter into a dissertation on the particular cases which require frog-pressure: I have assumed that there are many occurring in the practice of every veterinarian, and I offer this invention to their notice with the greatest good feeling, not ever expecting that it will entirely supersede the practice adopted for the same end by others, but

hoping that, as an auxiliary, it may be useful to the profession in the great cause of preserving or bettering the foot of the horse.

One of you, Messrs. Editors, has had a shoe of this kind some time in his possession; and I sincerely hope that you will be able, in this or some future number, to add some remarks on its application, which will be much more interesting and useful to us than any I can offer.

THE RIGHTS OF THE GRADUATED VETERINARY SURGEON.

By "A VETERINARY STUDENT."

KNOWING your Journal to be open to every thing which will benefit the veterinary profession and facilitate the advance of veterinary science, I am induced to lay before you a few thoughts which have occurred to my mind respecting the manner in which the veterinary surgeon and the farrier, blacksmith, &c., in the present state of things, stand related to each other, and a simple means by which it might be remedied.

At present, the veterinary surgeon has no defence whatever against the intrusions of farriers, &c. upon his rights, for any person pretending to farriery may and does style himself a veterinary surgeon, to the manifest annoyance and disadvantage of the really qualified vet. An act of parliament was once tried for to prevent any but a regular veterinary surgeon from practising, but was not obtained; nor does it appear that a second application would be more successful than the first.

I would, therefore, suggest, that the profession at large should, each and every one, come to the resolution of placing on their sign-boards, over their gateways or doors, "*Veterinary Surgeon, by authority of the Royal Veterinary College of London,*" or elsewhere.

This would be a simple, easy way of preventing the obnoxious imposition; and a mere summons from the nearest magistrate would, at any time and in any place, be sufficient to oblige any such impostor to pull down a title which he may thus arrogantly have assumed.

I beg leave to lay these hints before you, resting assured that no veterinary surgeon will object to them; and hoping to hear, in the next number of THE VETERINARIAN, that some spirited member of the profession has set the example, and that it will be speedily followed by the rest.

We readily give insertion to the communication of "A Veterinary Student;" but we hope that the establishment of a public

board of veterinary surgeons, before whom every candidate for practice must appear, and without a licence from whom he will not be able legally to practise, will, at no distant period, establish a better distinction between the regular veterinarian and the mere empiric. Our young friend is wrong when he says, that "an act of parliament was once tried for to prohibit any but a regular veterinary surgeon from practising:" there was an attempt to obtain exclusive privileges for a particular school; but this, like every other illiberal and absurd grasp at monopoly in science; necessarily failed.—EDIT.

FORMATION OF (Qy. CARBURETTED) HYDROGEN IN THE RUMEN OF A COW.

By Mr. G. W. ALLINSON, *Idle, Yorkshire.*

LATE in the night of the 24th December, 1832, I was called on to visit a cow, the property of Mr. G. Stansfeild, cloth manufacturer, Idle. She had calved and cleansed on the 23d; was a large bodied cow with very short legs, and apparently of Scotch descent.

Symptoms.—Refused food and water, secretion of milk nearly suspended, pulse 50 and hard, extremities cold, bowels costive. The owner desired me not to bleed, but to give her a drink until morning. I reluctantly conformed to his request, and prescribed ℞. pulv. digital., antim. tart., hydr. submur. āā ʒj, in a pint of gruel; an hour after, sodæ sulph. ℔j in three pints of water.

25th.—Early that morning a messenger desired my immediate attendance, as the cow was dying. She was laid, her head thrown backward on the left side, and her appearance exhibited that prostration of strength so common in milk fever; pulse 80, legs cold, horns and ears warm. I bled to eight pints, and the pulse sunk to 60; a large quantity of very fetid dung was evacuated, and she appeared a little relieved. ℞. potassæ nitrat. ℥ss, magnes. carb. ℥j, antim. tart., p. digital. āā ʒj, mix, and repeat every six hours.

8 P.M.—Pulse 58, dung pultaceous and very fetid; no milk; continue medicine.

26th.—A little improved; pulse 50; dung not so fetid; all the extremities warm: gave four pints of milk; ate a little hay, and drank some gruel; continue the medicine every eight hours.

10 P.M.—Much worse; dung fluid and very offensive; all the extremities cold; respiration laborious; pulse 70, and hard: opened the jugular vein, the blood flowed rapidly at first, but

suddenly stopped when three pints had come, and I pinned up; appeared much distressed by the bleeding. ℞. pulv. zingib. ʒij, sodæ carb. ʒj, acid. tart. ʒss, aqua a pint.

27*th*.—Every bad symptom much worse, and there was, in addition, a fixed jaw, and a little enlargement of the abdomen; dung soft and fetid.

28*th*.—No improvement; but the body more enlarged; struggled very much.

6 P.M.—In the same state; rather more milk was secreted.

29*th*,—Worse; pulse 80; breathing stertorous; jaws firmly fixed; no other tetanic symptom; secretion of milk continued; more swollen.

4 P.M.—Dead. Post-mortem examination immediately presented the appearance of a cow that had been destroyed by having eaten too freely of clover or turnips. Though I had particularly desired the tanner who removed the skin to be careful, in opening the body, that he did not wound the paunch, the enlargement was so great that he made a small opening therein; the gas rushed out, ignited (with a small report) from a lamp at two feet distance, burnt for a few seconds at the orifice, the stomach sunk down, the gas being expended. The man's eyebrows and whiskers were scorched.

For some remarks on the formation of hydrogen in the rumen of cattle, we refer our readers to the 14th No. of the Treatise on "British Cattle," published by the Society for the Diffusion of Useful Knowledge.—ED.

A CASE OF CORDS IN CATTLE.

By Mr. J. CORBET, *V.S., Simonborn.*

A COMPLAINT incident to oxen, and generally happening to those that have not attained their second year, is here called twisted or corded; not, however, resembling the cords so ably described by some practitioners in Forfarshire. This complaint commences with symptoms resembling slight gripes, total disinclination to feed, and nothing passing in the form of actual fæces, although some small quantities of mucus are frequently voided. I have known an animal remain five days, and I have then operated upon him, and the case has turned out successful. The operation is begun by making an opening into the inside of the ox, beginning a little before the ileum. The arm is introduced, and, in general, the cord or ligament is easily felt, commencing a little behind the kidneys, at the origin of the spermatic vessels, and attached to some part of the pelvis,

and which appears to strangulate some portion of intestine. In some cases I have found two ligaments, varying in size from a small quill to three times that magnitude. If operated upon early, the animal generally recovers without the aid of medicine. I have never seen any record of this complaint in books of farriery. What think you of it, Messieurs Editors?

This seems to be the effect of castrating the ox by drawing out the cord or spermatic artery. The vessel, when torn asunder, recedes into the scrotum and up into the abdomen, and there producing inflammation: the formation of a new membrane is the consequence. Such, at least, appears to be the probable cause; but further observation may throw more light on this subject, and, we think, direct to the means of preventing its occurrence. The hint we have thrown out will, perhaps, induce Mr. Corbett to examine more carefully the cases which may come under his treatment, and communicate his observations, both on the cause and, more fully, on the operation. This, at least, is not inappropriately called the cords. D.

A CASE OF STRANGLES, WITH INFLAMMATION OF THE PAROTIDS AND MESENTERY.

By Mr. S. Browne, *V.S., Melton Mowbray.*

My attendance was requested to a brown four-year-old horse, on the 22d of Sept. 1833, which was labouring under the febrile symptoms of strangles. There was accelerated pulse, cough, sonorous breathing, purulent discharge from the nose, &c. I directed them to steam his nose, foment his throat, and to feed him with mashes and grass. Some fever medicine was sent, and a bottle of liquid blister, which was applied to his throat.

The discharge from the nose became copious, accompanied by tumefaction of the submaxillary glands, which in due time suppurated. His appetite continued impaired, and he experienced some difficulty in swallowing, which was principally owing to the parotid gland on the near side having become enlarged. The pulse was natural. Some tonic fever medicine was then given, and local remedies were applied to the swollen gland, which also suppurated. The sonorous breathing, the discharge from the nose, and the cough, nearly ceased; but his appetite did not improve, and he lingered in this state until the evening of the 23d of October, at which period he threw himself down with great violence, and died before I could see him.

The morbid changes which I observed after death were inflam-

mation in the parotid glands and surrounding cellular tissue; but the parts were not so much tumefied as to impede the action of the larynx. The serous membranes of the thoracic and abdominal viscera were healthy, except that the portion of small intestine, which encircled a scirrhous mesenteric gland, was excessively contracted and in a high state of inflammation. The internal structure of the tumour was cellular, and contained a large quantity of purulent matter; but the texture of the scirrhous portion was very thick, somewhat irregular, and apparently possessed of little vascularity. This horse was purchased about the middle of August, fat, and apparently healthy; at which period he was taken into the stable and liberally fed with corn, although his labour was little more than daily walking exercise. Previously to the attack of the strangles, the groom frequently observed the horse striking his belly and throwing himself down whilst he was in the stable, as if he was labouring under some chronic abdominal pain; and during my attendance I found him in a recumbent position several times; a symptom which I have no recollection of having observed in cases of impeded respiration. Towards the end of that period the groom stated that he was generally down, or, to use his own words, "he never saw a horse throw himself down with such rattles in his life."

I have met with cases of strangles in which local tumour and abscess have supervened; but I do not regard this as one of the sequelæ of that malady, because I conceive that the nature of the tumour, the animal's listlessness in the stable, and the frequency of lying down, were sufficiently indicative of the abdominal disease. However, it may appear doubtful whether an animal labouring under an organic disease could be fat, and even feed well up to the period that he was attacked by strangles; but when we consider the horse's natural propensity to fatten, and the morbid insensibility of scirrhosities, it is, perhaps, not much surprising that the animal economy should have been so little impaired.

CASE OF DROPSY IN THE UTERUS OF A COW.

By Mr. J. Steel, *V.S., Biggar, N. B.*

I was called, on the 16th July, to see a cow belonging to Mr. John Tweedy, farmer, Green Bank, in the parish of Welston, which was dropsical. The owner stated that she should have calved on the 15th of April, but had not: she was very much emaciated, the pulse quick, and the abdomen so large that her sides rubbed upon the door of the byre, which was of ordinary size, as she was going out or in. I proposed to tap her, but the

owner seemed no way inclined to have it done, and wished me to try the effect of medicine, which I did without any improvement.

I heard no more of her until the 24th of July, when I again received a message to go and see her. I found she had taken no food for two days. The pulse was 112; and she seemed to be suffering much pain, and was continually striking at her belly with the hind feet.

The owner now desired me to do whatever I pleased with her, as he considered that she was a dead cow; but I was in no ways inclined to do any thing with her, as I considered it a hopeless case; yet, as he urged me to do something, I again proposed tapping her, but told the owner that he need not be surprised if she never rose again. He was thus prepared for the worst.

I had her taken from the house to a convenient spot. I threw her and secured her, and introduced the trocar into the abdomen, midway between the udder and umbilicus; when instantly rushed out a fluid clear as crystal, about the thickness of oil, and quite the slippery feel. I then had her raised on her feet, and received the fluid into a proper vessel. It amounted to the enormous quantity of 102 quarts. I left the canula in the wound, and the fluid continued to dribble from her for two days. I ordered the cow a few tares, with gruel, and gave alterative medicine for a time. Two days after the operation she produced, with a little assistance, a putrid fœtus, which had the appearance of having come to its proper time. She now began gradually to improve, but had a *prees* (Qy. what?) for about a month, and a great quantity of an acrimonious substance escaped from the uterus. She is now in good condition, and feeding well.

THE VETERINARIAN, MAY 1, 1834.

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

CATARACT.

THE attention of the readers of THE VETERINARIAN—may I not say of the profession?—has, from the commencement of the present year, been most interestingly called to the subject before us; and I think I may now add, in such a manner as appears likely to elicit some highly useful and important additions to our present stock of knowledge on the diseases of the eye. Although

the case of the trial to which Mr. Cartwright alludes in his communication on this subject (in the No. of THE VETERINARIAN for January last) stands reported so far back as August 1832; yet to that gentleman—one of the stanchest supporters of THE VETERINARIAN, and surest advancers of our science—and to that gentleman alone, belongs the credit of having caused fresh light to be thrown upon a subject which has ever been involved in mystery and darkness.

The points at issue in the trial, and which are left for our present and future consideration, are the two following:—1st, Whether it be possible for cataract to form without any previous or concomitant signs of inflammation being apparent in the eye? And if so, how or in what space of time may, or commonly does, the occurrence take place?

Professor Coleman, to whom we all naturally and properly look for authority when there arises amongst us any subject of dispute, has observed in his lectures—"We often find cataract without any inflammation existing at the time: though on inquiry we shall discover that there has been some previous disease. I do not mean to assert that inflammation necessarily precedes it; but it is almost always the case."

In respect to what happens in our own persons, Professor Cooper*, in detailing "the causes of the cataract," has remarked as follows:—"Persons who are much exposed to strong fires, as blacksmiths, locksmiths, glassmen, and those who are engaged in similar employments, seem to be more subject to the cataract than others. Persons above the age of forty are reckoned more liable to cataracts than younger subjects.—*Wenzel.* The disease, however, is by no means infrequent in the latter; even children are often seen affected with this kind of blindness, and some are born with it. The habitual vision of minute objects in a dependant position of the head, by which an undue proportion of blood is said to be thrown upon the organ, frequently brings on cataracts."—*Med. Chir. Trans.* vol. iv.

In the majority of instances a cataract seems to arise spontaneously, without any assignable cause. Sometimes the opacity

* See the Professor's "Dictionary of Practical Surgery."

of the lens is the consequence of external violence, a case which more frequently than any other gets well without an operation.—" Frequently," says a modern writer, "the cataract proceeds from an *hereditary* disposition, which has existed for several successive generations ; while, in other cases, it attacks several members of the same family, without any disposition of this kind being recognizable in their progenitors."

In reference to what happens in horses, the evidence Mr. Clay (V.S. Shrewsbury) gave on the trial I have alluded to is of such moment to us in this inquiry, that, although Mr. Cartwright in the last month's No. revised it, I hope I shall stand excused for reiterating it in this place. Mr. Clay deposed, that "cataracts might be formed in a fortnight or three weeks ; has known *many* instances where they had been formed in *less time;* has known them to be formed without active inflammation, and without any previous apparent disease of the eyes ; and has detected them when the owners had not the slightest suspicion of disease in the eye, and had declared that no previous inflammation had been observed." These are statements of a novel and highly interesting character ; and such as make me feel so desirous to have "further particulars," that I cannot help joining in prayer with Mr. Cartwright, that Mr. Clay will "favour the public with the cases on which they are founded."

In the mean time, Mr. Cartwright himself—ever first in the field where facts are wanted—comes forward with two cases of his own. The first is that of a five-year old horse that had "*two* cataracts in *each* eye:" two of the magnitude of a large pin's head ; the other two, treble that volume. In other respects, the eyes were perfectly transparent; and the person who bred the animal declared that his eyes had never before shewn disease. The horse was sold in the month of December, 1831, "with the cataracts evident enough ; but from that time they gradually disappeared, and in the autum of 1832 there was not the least to be seen of them." The other case occurred in a five-year old cob-mare. In the month of November, 1832, Mr. Cartwright detected a cataract in her right eye, "of the size of a coriander seed." In August 1833 the cataract had disappeared. No previous or concomitant ophthalmia could be discovered.

Mr. Cartwright is quite correct in the inference he draws from my "lectures," that I had "not seen a case in point." And I cannot just now bring to my recollection *how* or *from whom* "I had heard" that cataract occurs without inflammation : though it is pretty evident, come from whomsoever the report might, that I put at the time little or no credence in it. Experience, however—that slow but sure guide to truth—has taught me that I was hurrying on too fast in my own road; and that many of the steps I then made must now, to all appearances, be retraced.

Referring to some notes of cases I made in the year 1826 (a reference I was led to make from seeing Mr. Cartwright's communication in THE VETERINARIAN), I found the following:—Mr. Courtney brought his horse one morning to the infirmary at Woolwich, in consequence of its having fallen with him on his way to town, and cut its knees and grazed one eyebrow. The injuries in the knees were hardly skin-deep, and but of trifling consequence; but on my attention being drawn to the eye, I observed the cornea to be partially nebulous, and a cataract to be plainly visible through the pupil. Neither of these defects was apparent enough to attract any one's notice, hardly, but that of a professional person; and both were quite unconnected with the slight bruise the orbital arch had sustained by the fall not above an hour or so before. Mr. C. expressed himself much surprised at the disclosure of all this disease in his horse's eye, saying that, to his knowledge, the animal had on no occasion manifested any signs of weak or bad eyes. I opened the eye-vein, and it bled very freely. I gave the animal a dose of physic, and also ordered a lead wash, with a little tincture of opium in it, for the eye. I told Mr. C. that I might probably succeed in removing the corneal opacity; but, as for the cataract, that he might regard as beyond the reach of medicine. He returned with his horse on the fifth day, saying that the physic had operated briskly, but was now set, and that he himself thought the eye looked quite well again. I examined it, and could discover neither any relics of the corneal opacity nor of the cataract.

The year before last, while the regiment in which I am now serving was at Windsor, Mr. B. shewed me a favourite blood filly of his, three years old, very handsome, and of his own breeding. I was "looking round her," as the phrase goes, when, by mere accident, I discovered that she, in one eye—I forget which—had got a cataract: but such a one, I thought, and I believe said at the time, as I did not remember to have often seen before. It was, to use Mr. Cartwright's comparison, in point of magnitude, "of the size of a coriander seed," and exhibited to the eye of the observer a well-defined insulated white spot, surrounded and rendered still more perceptible by the clear blue of the pupil. It seemed to me to present to the beholder much the same appearance that a speck upon the cornea would produce were it possible to view it through the pupil from the back of the eye; a circumstance that (coupled with the fact of its occasional disappearance) disposes me to coincide in opinion with Mr. Cartwright, and regard it as a *capsular* not a lenticular opacity. I have not had an opportunity of seeing the filly since last year, when the cataract still existed, and *in statu quo:* I am, however, now growing very desirous for another examination.

Were I asked, how the practitioner could best distinguish a cataract of the above description from that which is of ordinary occurrence, and known by us all to constitute the common termination of periodical ophthalmia, I should say, in the present state of our knowledge, that the unusually lucid and healthy aspect every other part of the eye presents at the time, forms, abstractedly considered, our best diagnostic sign: the slightest indication, or even suspicion, of prior or present inflammation, be it understood, being a reason, presumptive at least, for coming to a different conclusion.

In respect to the period of time a cataract of this species—supposing it to be membranous,—might take in forming, I should apprehend that its production might, as its disappearance often would seem to be, be the work of a very short interval: five or six days, for example. We know that a speck upon the cornea will appear, after an injury, in even less time than this; why,

therefore, should not opacities form with equal rapidity upon the capsule of the lens?

In regard to *how* or *why* such a morbid alteration takes place, or, in other words, what constitutes its *proximate* cause, will, most probably, in veterinary medicine, as it has long done in human, puzzle much wiser heads than mine. The first case I have related of my own, would lead one to imagine that there existed some sort of sympathy or consentaneous action between the membrane of the cornea and that of the lens: we know such morbid sympathies do frequently manifest themselves in other parts of the body, and it is not easy to find a reason why something of the kind may not exert an influence in the case before us.

I shall wind up these few desultory, unconnected, and I am apprehensive, unsatisfactory observations on a subject apparently so novel and yet so full of interest to us all, in the words of Mr. Spooner, who addressed us in some very sensible remarks in the last No. of THE VETERINARIAN. "I hope the above subject will not be allowed to drop until it has engaged the attention its importance merits; and I trust that other veterinarians, of greater experience and more extended practice (than myself) may be induced to favour the profession with the result of their observations." To which I would add, I wish I dare name some on whom I would especially call for "the result of *their* observations;" which, unlike angels' visits, are neither few nor far between.

P.

Veterinary Affairs.

REPORT OF THE VETERINARY SCHOOL OF TOULOUSE FOR THE YEAR 1832-33.

THE prefect of the department, assisted by the mayor of the city, presided at the annual bestowment of diplomas and distribution of prizes in the school; Lieutenant General Gugot, and the principal of the academy of Toulouse, with many other public functionaries, were present.

The prefect opened the business of the meeting by speaking of the advantages which the city and the department had derived

from the establishment of this school. "Nothing, he said, could be more useful in an agricultural country, like the south of France, than a school calculated to form good veterinary surgeons. The domesticated animals were the first and are the most valuable machines of man; they may, in truth, be called, in the language of one of the professors, walking machines; so essential are the services which they render to the agriculturist and the mechanic. Persons who have been initiated into all the mysteries of science, skilful in comparative anatomy, and early instructed in the habits, the diseases, the wants, and the general management of domesticated animals, will render their country services that cannot be too highly appreciated. If the therapeutical treatment of quadrupeds has not an end so exalted as that of man, it is not inferior in the immense utility of its application, and in the variety and importance of the advantages which we derive every instant from those who are the objects of it.

Another consideration, and that in some sort of a political nature, is the intellectual advantage which will result to our country from the establishment of veterinary schools. Instead of the ignorance and mere routine which now alone preside over the management and the medical treatment of cattle, agriculturists and practitioners will be enabled to appeal to men of real science to resolve the difficulties which frequently present themselves with regard to the food and the diseases of their animals. This daily intercourse of our peasants and farmers with well informed veterinary surgeons cannot fail of being followed by consequences the most important as it respects the development of knowledge, the destruction of unfounded prejudices, and as a necessary consequence, the rapid improvement of agriculture. Who is not aware that superstition is too often summoned to the support of ignorance, when disease is prevalent among animals, and that the most ridiculous practices supersede the use of proper medical means? Under this point of view, a veterinary surgeon is henceforth an important character in a rural district, not only because he can heal the maladies of animals, but because he must necessarily diffuse among his neighbours a portion of that light which he has acquired in his course of study.

In addition to this, it is impossible not to believe that the veterinary art must exert the most beneficial influence on general science, and even on philosophy. By deeply penetrating, and that gradually more and more, into these mysteries of physiology, which have occupied in our days the most celebrated naturalists, from Bichat to Geoffroy Saint-Hilaire and Cuvier, the anatomy of so many animals must cast the greatest light on the question,

so difficult, of the nature of life in organized beings; and by the study of pathological phenomena in the brute, we cannot fail of arriving at a more extensive knowledge of the physical and moral character of man. At all times the question respecting the real situation of brutes in the scale of being has been one of the most difficult in philosophy. From the system which makes them merely simple machines without intelligence, and without a rudiment of moral feeling, to that which raises them in some sort to the level of man, the minds of the most eminent philosophers have been occupied in assigning them their proper rank in creation. Their sufferings without recompense have made some doubt a future existence to man—their affections, their devotion to particular persons, have caused others to believe that the friendships of men, like those of brutes, are founded on custom or interest alone; and, at the same time their direct relation with our principal wants, and their voluntary obedience to us, when they might overpower us by brute force, furnish some of the strongest arguments in favour of providence; while the immobility of their grosser instincts, which nothing can arrest or change, is evidence of the superiority of man. Hence it follows, that the study of the veterinary art, already so useful in other respects, closely allies itself with the highest conceptions of the human understanding, in its examination of the greatest difficulties which it has yet approached, whether it be in the study of the body or the mind.

M. Moiroud, the director of the school, next addressed the assembly. The following is an extract from his speech:—

"Schools have been formed to teach the manner of extracting the precious metals from the earth, and of converting them to various uses; nay, even of carving the wood, and fashioning the stone: they have been founded for the purposes of the song and the dance; but we have been left to long for one devoted to the advancement of that art which furnishes man with his subsistence, and which is the principal source of all his riches.

"Among the establishments of public instruction founded and supported by government, ours is almost the only one that can be considered as belonging to rural œconomy—the only one, the organization and proceedings of which can fill, with little cost and much advantage, the chasm to which I have just alluded. The building is completed; it is ready to receive that which was the object of our prayers, and which appears to us to merit the good wishes of all who are interested in the prosperity of our country, for it offer chances of success which it will be difficult to meet with elsewhere.

"The students coming from twenty-five or thirty different departments, who have here submitted to the regular discipline of instruction, and who are destined in their practice to unite

with agriculturists, in cases of every kind, for the comfort and health of the companions of their travels, can they not impart to their employers some portion of that knowledge of agriculture which they have acquired in this establishment? Or supposing, contrary to all probability, that this knowledge would have been cast away on the mere agriculturist, the young men who press in crowds to this beautiful city, whether to acquire the necessary information for the exercise of a liberal profession, or whether it be to complete their education, would find in the knowledge of rural economy, and the accessory sciences, a complement of instruction so much the more precious, as it would engage many among them to carry again to the pursuits of agriculture the benefits which they have here received; and they would find, in the cultivation of their patrimony, the riches and the consideration, the independence and the habits of a citizen useful to the state, and useful to himself.

"Accustomed to calculate on the generous intentions of the first magistrate of this department, and the intelligence and benevolence which have gained him the esteem and veneration of those who live under his administration, we have encouraged the hope that he will continue to bestow his patronage upon us; and the minister of commerce, who has given such striking proofs of his solicitude for the success of our school, in completing its effectiveness by six successive nominations in the course of one year, has obtained by this circumstance new titles to our gratitude."

The Editor of the Journal whence we are extracting this account goes on to say that, "Besides that to which M. Moiroud alludes, the council-general has, in the last session, voted funds for the establishment of a chair of agriculture in Toulouse; and, if the public authority had need of encouragement in the performance of this patriotic act, it would find it in the results already obtained."

The speech of M. Bernard, one of the professors of the school, proved that those who directed the studies of this establishment are no strangers to the higher branches of science; and, although treating on matters of deep physiological research, little known to the majority of the public, his discourse was listened to with marked attention.

In the printed account of the labours of the school during the year 1833, which we have hitherto been unable to procure, the Editors of the Journal say, that they remarked many curious facts and interesting observations, and which convinced them that the professors discharge the duties of their respective chairs with zeal and devotion. Many of them have prepared or are preparing anatomical and pathological works.

M. Rodet, professor of the different branches of natural

history, terminated the sitting by reading the result of the previous public examination of the students on three successive days. Forty pupils contended for their diploma, thirty-five of whom obtained it, and on six of them valuable prizes were bestowed, as a reward of superior merit.

The duration of veterinary education in the French school is four years. The pupils of every year are examined at the close of each session, and prizes were now bestowed on nine of the first year, seven of the second year, and six of the third year. To every prize was added a portrait of the venerable Bourgelat, the founder of the first French veterinary school.

Journal Politique et Litéraire de Haut Garonne.

Extracts.

Additional Cases of Palsy in the Horse.

By M. Bouley, Jun., *V.S., Paris.*

With Observations by M. Renault, *Professor at the School of Alfort.*

When I attempted to trace, in the Recueil de Médécine Vétérinaire, in the years 1829 and 1830, a sketch of the diseases of the spinal cord in the horse, I regretted that I was unable to offer a complete monograph of these affections, and I pledged myself to communicate any interesting facts that I might afterwards be able to collect on this subject. I now redeem that pledge.

Eleven cases, contained in the memoir referred to, having sufficiently illustrated the principal alterations that ordinarily present themselves in the spinal marrow and its envelopes in horses that die paralytic, I shall abstain from producing here many similar facts that I have collected since that time, and which would cast little light on the history of these diseases, and shall confine myself to the relation of two cases which I deem particularly worthy of preservation.

CASE I.

A bay mare, eight or nine years old, strong and well made, after having been well fed, was harnessed to a light cart, at four o'clock in the morning on the 23d of December, 1830, in order to draw some goods from Bagnolet to Paris. The servant observed that the animal proceeded more slowly than usual on her journey, and when she arrived at her destination, Faubourg St. Antoine, he remarked that she was agitated, and that her hinder

limbs particularly trembled. Imagining that she must be seriously ill, he hastened to detach her from the vehicle, and to lead her to the shop of a neighbouring farrier. Observing that she was continually lying down and rising up, the farrier thought that it was merely a fit of colic, and administered a vegetable infusion with aromatic ether. This medicine, instead of allaying the pain, seemed to increase it; but that did not prevent the farrier from giving a second dose, which produced the same effect as the first. At length, at ten o'clock, the proprietor, who had been informed of the case, having arrived from Paris, applied to me to undertake the treatment of the animal.

She was then lying on her right side, and evidently suffering much—her body was covered with sweat, and the perspiration was so abundant that it formed an atmosphere of vapour around her. Her limbs were in incessant agitation, but the fore limbs were moved more extensively than the hind ones. The pulse was full, hard, and slightly accelerated. In spite of her pain she preserved her appetite, and ate with voracity the food that was presented to her*; from time to time she expelled with considerable force some hardened pellets of dung, and, half an hour before my arrival, she voided, while she was standing, a great quantity of dark-coloured urine†.

I attempted to raise her, and which was accomplished with considerable difficulty; but in the act of backing she fell suddenly on her litter. A little while afterwards she attempted once more to get up, but was unable to accomplish it. She had the partial use of her fore limbs alone, and with difficulty raised herself on her haunches, in which position she remained for some minutes.

After this series of symptoms I could not doubt that it was an acute affection of the spinal cord or its membranes, and one of a very serious nature. I effected, according to my custom, a bleeding from the jugular of about ten pounds, and I prescribed mucilaginous drinks and injections.

* I should here remind the reader that, in treating of the diseases of the spinal cord, I have described this symptom (the preservation of the appetite) as pathognomonic, and serving to distinguish palsy produced by some morbid state of the spinal cord or its membranes from that which is complicated with indigestion and retention of urine. Experience has since confirmed the opinion which I then ventured to give.—*Author.*

† In man, palsy is always accompanied by involuntary discharge of fæces, and by retention of urine. I have never observed these symptoms in the horse. The expulsion of the pellets seemed to be the voluntary act of the animal; and I have, in no case, remarked retention of the urine. It is true, that the perspiration which in these cases inundates the bodies of the sick animals would render the secretion of urine much less abundant. It is, perhaps, to this circumstance that we must attribute the absence of retention of urine in the horse.—*Author.*

At four o'clock I again visited her, and I found her considerably worse. She had made many useless efforts to get up—her pulse, less developed, was more accelerated; and she had lost all power over her hind limbs. She was bled again from the two saphenas, and the drinks were continued.

At nine o'clock she seemed to be in a desperate state,—the pulse was small, scarcely perceptible, and about eighty beats in a minute; her hind limbs, almost cold, had lost both sensibility and power of motion; the pupils were dilated; the animal could neither see nor hear, and, in fact, every thing indicated approaching dissolution. Two large blisters were applied to the thighs; but at ten o'clock she died.

Examination eleven hours after death.—About a pint and a half of red-coloured fluid was found in the abdomen, and traces of inflammation were observed on the mesentery and small intestines. The lungs, and particularly the right one, were gorged with blood. The left cavities of the heart and the origin of the posterior aorta contained some fibrous masses. The superficial veins of the brain were slightly injected. The brain itself was in its natural state. The spinal marrow, from the neck to the commencement of the sacrum, presented no sensible lesion. The dura mater and arachnoid membrane were perfect: *but this was not the case with the lumbar nerves, which instead of being of a pearly white colour, were yellow, softened, slightly thickened, and torn with the greatest facility; the superior and inferior roots were in the same state.*

CASE II.

On the 2d of September, 1833, an aged sorrel mare was, during her work, and without any apparent cause, seized with violent lameness of the right hind leg. She was immediately unharnessed, and with much difficulty led to my infirmary about ten o'clock in the morning, and during my absence eight pounds of blood were abstracted.

At eleven o'clock I saw her for the first time. She was beating herself about, lying down and getting up incessantly, and when she was up she rested with pain on the lame leg, and almost constantly kept it flexed and drawn up. She seemed to suffer dreadfully, nevertheless she ate with eagerness; her body was covered with perspiration, and her pulse was hard and wiry. These symptoms left me no room for doubt respecting the nature of the malady, and I hastened to repeat the bleeding, and gave her an infusion of linseed meal, to which I had added four ounces of laudanum. These means producing no remission of the symptoms, I opened the two saphenas for about ten minutes, and which loss of blood produced a very sensible change. She

was calmer, and the previously profuse perspiration was much diminished; but this improvement was only temporary, and very soon new symptoms began to manifest themselves. She had been standing nearly half an hour, but she now lay, or rather fell down, and the pain which seemed to have been confined to the right hind leg, all at once manifested itself in the opposite one. From this moment the animal could not raise herself without great difficulty, and never perfectly effected it.

I then cut off the tail, and a great quantity of blood was lost; but this measure was as fruitless as the others, and did not in the slightest degree arrest the progress of the disease. At ten o'clock I placed two setons dipped in a strong stimulating mixture in her thighs; but the power of voluntary motion, and the sense of feeling in her hind legs, were nearly gone, and the temperature of these limbs was also considerably diminished. She gradually became unconscious; the pulse could scarcely be felt, and every thing announced that death was inevitably approaching. She lingered on, however, until nine o'clock on the following morning, when she died.

Examination six hours after death.—Neither the abdominal nor thoracic viscera, nor the brain, presented any remarkable appearance of disease.

The spinal canal, which was opened from the dorsal region to the commencement of the sacrum, presented, at first sight, no great deviation from health, although the cause, and the only cause of death, existed here.

The adipose tissue which enveloped the dura mater was infiltrated with a reddish fluid, extending from the last dorsal to the last lumbar vertebra. The dura mater exhibited no lesion. *The arachnoid membrane was much injected, for the space of about five inches,* corresponding with the lumbar portion of the spinal cord. *The membrane was also slightly thickened,* and the subserous tissue sensibly engorged*. The spinal marrow itself was of its ordinary colour and consistence.

* M. Andral says that there is no record of the arachnoid membrane of the spinal cord being found opaque, *injected, or thickened*; and that the morbid changes that take place are certainly beneath this membrane. He adds, that the term *arachnitis*, given to inflammation of the membranes which surround the spinal marrow, is altogether inapplicable.—*Dictionnaire de Medecine* (Moelli épinière), tom. xiv.

From this passage one would be tempted to believe that this learned author imagines that the spinal arachnoid membrane is not susceptible of inflammation, as other serous membranes are: but the fact which I am here relating, and the memoirs of M. Dupuy, stating the presence of a fibrous membrane, thickly set with tubercles, on the spinal arachnoid of a paralyzed ox (a case which I have related in an essay on the diseases of the spinal cord), seem to demonstrate the contrary, at least in our larger domesticated animals.—*Author.*

On reconsidering these two cases, it appears that these animals died in less than twenty-four hours; that the disease was palsy of the hind limbs; and that on examination after death, the spinal marrow did not present those serious alterations which we are accustomed to meet with under similar circumstances; that in the first nothing was observed but a yellowness, softening and thickening of the nerves of the lumbar region, and in the second, considerable injection of the arachnoid membrane of the same region.

If it is asked how alterations so slight in appearance could produce affections so serious, and so speedily terminating in death, I reply, that I am utterly unable to account for it; but I add that, notwithstanding the valuable labours of Gall, Spurzheim, Bell, Magendie, and Fleurens, and many other physiologists, our notions of the organization and functions of the spinal cord are sadly incomplete, and therefore it is not surprising that our knowledge of the maladies to which it is subject, and the lesions of which it is the occasional seat, should also be imperfect.

To the above interesting cases, recorded by M. Bouley, M. Renault (one of the editors of the "Recueil") has added two others, selected from the records of the school at Alfort. The first is analogous to the second in M. Bouley's memoir; the other possesses considerable novelty with regard to the exceedingly slight alteration that had taken place in the spinal chord.

CASE I.

A large mare, six years old, of good constitution, and that had been accustomed to draw in the diligence, was suddenly seized with lameness in one of her hind legs, as she was at work on July the 9th, 1832. The farrier who attended her, not perceiving any ostensible cause of lameness, ordered rest. She did rest until the 14th, when the lameness not appearing to be very severe, she was harnessed to a cabriolet, that was to convey one passenger only from Charenton to Paris. She did her work without apparent inconvenience, until she arrived at Charenton Street, in Paris, when she all at once lost the use of her hind limbs, and fell between the shafts without making the slightest effort to rise again. After having unharnessed her, several persons in vain attempted to put her upon her legs; her hind limbs hanging loose, and floating as it were, afforded not the slightest support when she was held up, and she was placed on a bed of straw that was prepared for her at the side of the street. A farrier in the

neighbourhood, who was sent for in great haste, took four pounds of blood from her; this was about eleven o'clock in the morning.

A few minutes afterwards, M. Delafond, who was going to Paris, was requested to look at her. He immediately recognized a paralytic affection, which he attributed to congestion in the spinal canal, and he abstracted twelve pounds more of blood, ordered stimulating frictions on the limbs, and advised that the mare should be placed on a sledge, and conveyed to the hospital at Alfort.

At two o'clock the animal was in the same place and in the same state. She was then visited by M. Renault, who practised a third bleeding of ten pounds, and ordered renewed frictions, and frequently repeated. He also advised that the animal should be covered, for she was perspiring abundantly, and he urged the proprietor to have her conveyed to some stable where she might be better taken care of. She was brought to Alfort in the evening, and placed under the care of a pupil named Noviant.

The pulse became more developed during the night, and the pupil, following the instructions which he had received, practised a fourth bleeding of ten pounds. Thirty-six pounds of blood were drawn from the animal during the first twelve hours after the appearance of the disease.

15*th*.—The mare was lying on deep litter, without the power of rising. The pulse was small, soft, and accelerated; the mucous membranes were slightly red. Exploration by the rectum, shewed that the bladder was distended. A light pressure on that organ with the hand produced the expulsion of a great quantity of urine, bloody, thick, and exhaling an ammoniacal odour.

Renewed efforts were made to place the patient on her hind legs, but without success; she fell as soon as the attendants discontinued to support her. From time to time she struggled violently with her fore legs, but her hind ones were motionless. She was pricked deeply on different parts of these extremities, without appearing to suffer the slightest pain. The head was continually turned back on the side. Her breathing was quickened in consequence of the efforts which she made every instant, and she frequently uttered a low plaintive moan. An abundant perspiration covered the whole of her body. Her appetite was not in the slightest degree impaired.

Frictions with hot vinegar were made over her loins and hind limbs; acidulated drinks were given three or four times every day; emollient injections were thrown up, and a catheter of elastic gum was occasionally introduced into the bladder to pre-

vent the accumulation of urine. Her food consisted principally of gruel.

16*th*.—There was little change. She dunged twice, with slight effort, after the administration of injections. The quantity of urine which was taken from her at different times by means of the catheter was about nine pints. It was thick and bloody.

In the course of the day the disease seemed to be aggravated, notwithstanding which she regained a little sensibility in her hind limbs. The attempt was often made, but fruitlessly, to raise her. She gradually became weaker. The same treatment was prescribed, and she was turned on the other side. At six o'clock in the evening fifteen or twenty punctures were made over the loins, and which were followed by long and powerful friction with ammoniacal liniment. The punctures did not appear to give any pain. During the night the fore limbs were constantly in motion. The pulsations were 90, and the respirations 70, in a minute. The urine which was drawn from the bladder retained the same character. The mare drank with ease some white water which was offered to her, and she seized with avidity a little hay, which she tried in vain to eat; the position in which she was prevented her.

17*th*.—The agitation is so constant and violent that it is impossible to feel the pulse; the weakness is excessive, and the sweat gushes from every part of the body. Sensibility is nearly returned to the hind limbs, and the least prick on them causes convulsive movements over the whole of the body. Renewed frictions on the loins and hind extremities with the ammoniacal liniment were ordered; the other treatment continuing the same. She died at nine o'clock on the following morning.

Post-mortem examination two hours after death.—The digestive and respiratory apparatus were perfectly sound. The bladder was moderately distended by a fluid like that which had been drawn from it during the two preceding days. Some ecchymoses were observed on the mucous membrane which covered the base of the bladder*. Large spots of ecchymosis† were seen

* The frequent sympathy of the urinary organs, and particularly of the bladder, with diseases of the membranes of the spinal canal in the horse, is a fact worthy of observation. We have opened many that have died of vertiginous affections, and in most of them the urine voided during life was of a high colour, or tinged with blood; in all of them the mucous membrane at the base of the bladder was marked with red spots, more or less large or numerous, or exhibited a singular arborescent or dark-coloured injection.

† These ecchymoses are almost always met with in horses whose death is attended with violent struggles.

under the serous membrane that lines the left ventricle of the heart.

There was no sensible alteration of the brain or its membranes, or the spinal marrow, but there was a great injection of the arachnoid membrane of the lumbar portion of the membrane, and whose intense red colour offered a singular contrast with the pale tint of the other portion of the membrane. There was no change in the arachnoid fluid, nor in the pia-mater, and the word *injection* is designedly employed in distinction from *inflammation*.

CASE II.

An Hungarian draught horse, nine years old, and of middle size, belonging to a waggoner, was put to work after four days' rest, and having been full-fed, when, all at once, he began to perspire abundantly, and was lame in the right hind leg. The lameness increased, and extended to both legs; and, eight or ten minutes after the first appearance of these symptoms, he fell totally paralyzed in both hind legs. A message having been sent to the school, two pupils were immediately dispatched to the place where he lay, who, seeing the alarming state in which he appeared to be, advised that he should be brought immediately to the hospital. He was conveyed thither on a sledge, at six o'clock in the evening; but before he was moved the pupils bled him freely, by opening the two saphenas, and cutting off the end of the tail.

Having arrived at the school, he at once began to eat, but presented all the symptoms of complete palsy. Ten pounds of blood were abstracted; stimulating frictions were applied to the loins; he was warmly covered, and acidulated drinks were administered. During the night the horse frequently moved his hind limbs, and on their being pricked, it was manifest that there was a return of sensibility to them.

15*th*.—The horse appeared to be better. The sensibility of the limbs was greater, and he turned himself upon his litter. Five pounds of blood were taken from the tail, and the other treatment continued.

16*th*.—More power of motion in his limbs, but less sensibility. He ate his litter, and eagerly devoured the hay that was put before him. Five pounds of blood were taken from the jugular; stimulating injections were thrown up, and a laxative drink administered.

17*th*.—No amendment. We attempted to raise him, but we could not support him on his hind extremities. He was abandoned by the proprietor. Continue the same treatment.

18*th*.—In the same state. It was determined to bleed him to death.

Post-mortem examination immediately after death.—There was no considerable lesion in any of the viscera of the thorax or abdomen, except that within the lining membrane of the left ventricle of the heart there were spots of ecchymosis, resembling those found in the last case.

The muscles that surround the lumbar vertebræ, and particularly the psoas, were unusually pale and soft.

The cerebral mass retained its ordinary consistence and colour, and its membranes had undergone no alteration.

The liquid that escaped when the membranes of the spinal cord were cut through was colourless and transparent.

On the arachnoid membrane of the spinal cord, at the middle of the dorsal region, and on its superior part, was a patch of vivid redness, which formed a singular contrast with the pale tint of the rest of the membrane. This patch, which extended from fifteen to eighteen lines in length, and from six to seven in width, was surrounded by an areola of a reddish yellow colour, and which was gradually lost in the general colour of the arachnoid. Believing, at first sight, that this was to be attributed to ecchymosis on the surface, or in the substance of the membrane, we examined it with close attention, but could not discover the slightest vascularity. A piece of white paper being placed in contact with both the surfaces of the membrane, was not reddened even after it had been lightly rubbed along the membrane. This partial discolouration, then, was evidently not the result of ecchymosis, but was produced by an intimate combination of the blood with the tissue of the membrane. Whatever may have been the nature of the lesion, we had never before met with these appearances on a serous membrane, the portion of the medullary organ with which it corresponded not having lost any of its natural characters.

The only lesions which the cord itself presented were in the lumbar portion of it. We there observed the commencement of a softening process (*ramollissement*), but which had not yet reduced the medullary substance to the state of pulp in which we have sometimes seen it. The spinal marrow preserved its natural form: it was only slightly tinged with yellow; but when it was pressed between the fingers, in order to ascertain its consistence, it was easily crushed, and the softness increased towards the centre of the cord. This friability was most evident in the inferior columns.

The central grey portion of the spinal cord was that in which this change was most advanced: it was a perfect pulp, and of a

clear red colour, that was particularly evident when compared with either the superior or inferior columns of the cervical portion, where the colour is grey, with the slightest hue of red.

This would lead us to believe, that in the greater number of these *rachidian ramollissements*, the change commences in the grey substance. The greater vascularity of the substance would give greater probability to this supposition, and especially if we admit, with M. Bouley, that these softenings are often the consequence of congestion, or of sanguineous spinal apoplexy.

The last case appears to be peculiarly worthy of attention, because, the examination having taken place immediately after death, the softening of the muscles, and of the spinal cord could not be attributed to any process of decomposition, or to any post-mortem change.

E. R.

The Result of the Castration of Two Thousand Horses in the French Cavalry, in 1830-31.

By M. Texier.

My situation, as veterinary surgeon, having given me the opportunity, in 1830-31, of observing many unpleasant results of castration, I am not willing that certain facts worthy of the attention of practitioners should be lost.

From the beginning of December 1830 to April 1831, I received for my regiment at Evreux about 2900 horses, 2000 of which were castrated. The operation was performed with the clams, in the covered way, on the morning after they were received, at the expence of the contractors, and by a gelder provided by them.

We received 20, 25, and sometimes 30 horses daily.

The air was almost always cold and damp. The stables in which the horses were placed had belonged to the ancient convent of St. Sauveur. I believe that they were once merely caves. They were low, and their floors were lower than the surrounding ground. The horses that were castrated were from five to seven years old. They were all submitted to a regimen suited to the condition in which they were, and the clams were removed by the gelder himself at the expiration of eight-and-forty hours.

Out of the 2000 horses thus castrated, 200 experienced illness or accidents more or less severe; but there was a great resemblance between the symptoms of all of them.

In general, suppuration was established on the third or fourth day. There were not more than a dozen exceptions to this, and

they evidently began to be ill before the suppuration commenced. It was ordinarily from the fourth to the sixth day that symptoms of illness appeared. In a small number this varied from the sixth to the fifteenth day; with still fewer, a month elapsed; and in one or two, full two months passed over.

The symptoms usually succeeded to each other in the following order, after the illness commenced:—

1*st day*.—The horse often hung back to the very extent of his halter; he held his head low; he drew a little hay from the rack, but he did not eat it; he drank water whitened with barley-meal; he rested sometimes on one hind leg, and then on the other; he was tucked up; his eyelids were partly closed; the conjunctiva was red; the pulse hard, wiry, and frequent; the pellets of dung hard, and covered with mucus. The suppuration of the cords was arrested, and the wounds had a dry appearance; the swelling was almost limited to the scrotum, and extended from before backwards; it was hot, painful, and it terminated abruptly in a kind of ridge; it contained a red-coloured transparent liquid, as was evident when scarifications were made.

2*d day*.—The same general symptoms; but the tumour was enlarged and very hard and painful; the animal shrunk when he was pressed on the side of the belly or the flanks; the pulse was hard and quick.

3*d day*.—The horse no longer pulled his hay, but he continued to drink; the tumour was hard, and sometimes extended before as far as the girth, and descended along the thighs. In some horses it was on the left side, but oftener on the right. The swelling was neither so hot, nor so hard, nor so painful; when it was pressed, the mark of the finger remained on it, and it was always terminated by a ridge well marked. The parietes of the abdomen were more tender, and the animal groaned when they were pressed upon. The pulse was not so strong, but quite as frequent.

On the *fourth day* all the symptoms were aggravated; the tumour extended to the very point of the breast; it reached the fore limbs, and spread down the hind ones as far as the hock; it was softer, not so hot, and its contents were more fluid, and not so highly coloured. The pulse was feeble and small, but very frequent.

From the fourth to the fifth day the horse rapidly became weaker; he staggered when he attempted to move; he stood wide behind, the better to support himself; and had not this been so, he would have been forced to have stood wide on account of the swelling of his thighs. The pulse was become intermittent, thready; it was still quicker and quicker; the nostrils were dilated, and, at length, the horse fell and died.

Sometimes the swelling was not so extensive; but then the symptoms of peritonitis were more evident; and the majority of these horses were likewise attacked by pleurisy and pleuro-pneumonia.

On examination after death, when the swelling was very great, we found, as might have been expected, a great quantity of serous fluid, which gave a yellow tinge to the cellular membrane, which was otherwise pale and livid. In some parts there was infiltration of the inter-muscular cellular tissue, of the colour of currant jelly, or of blood which had stood in a vessel during some days. The inferior part of the cords was dry, easily torn, and of a grey colour; a little higher, the tinge was lighter; towards the lumbar region they were infiltrated with a yellow serosity, in the midst of which were seen patches of a brown hue.

In the abdominal cavity there was always found a great quantity of fluid, especially when the engorgement had not been considerable. This fluid was turbid, bloody, or dark-coloured, and contained generally numerous little masses of yellow fatty matter, and which gave it the appearance of a mixture of wine and oil. Many parts of the peritoneum, or rather of the sub-peritoneal tissue, were red, both on the abdominal and pelvic parietes, and on the intestines themselves, and especially towards the posterior and inferior parts of them. There were no false membranes, and the intestines were generally empty.

The pleural and pericardic cavities generally contained a serous fluid, analagous to that which was found in the abdominal cavity, but less coloured, and that colour had relation to the state of the sub-serous tissue by which it was secreted: this tissue was more or less injected. There were no false membranes on the surface either of the pleuræ or the pericardium.

In general the muscles were discoloured and flabby, and the blood was fluid, and of a very deep colour.

All the symptoms which I have described did not arrive at their height without being combatted. The means which I employed were various. I adopted the antiphlogistic plan, with scarifications, on the first twenty horses that were ill. The diet was restricted. Three or four bleedings of three pounds each were resorted to on the first day. The populeum ointment (of an anodyne nature) and emollient lotions were applied to the tumours; vapour baths were used; warm and mucilaginous drinks were given, and emollient injections; deep scarifications were made, and these numerous, and along the whole extent of the tumour.

On the second day the treatment was continued.

On the third day I bled twice only, but still, as before, taking three pounds at each time; otherwise the treatment continued the same.

On the fourth day one bleeding, and the same treatment continued.

Every one of these twenty horses died.

Disappointed and grieved at the result, I altered my plan, for I had no longer any chance of doing good by persisting in my former course.

At the appearance of the first symptoms I abstracted six or seven pounds of blood. I plunged the hot iron into the tumour, with or without previous scarifications; and at the same time I rubbed the swelling with equal parts of ammonia and olive oil. I bathed the inferior extremity of the cords with the same lotion. I repeated the friction and the bathing four or five times during the first day.

At the expiration of about twelve hours I found that the tumour was not so circumscribed as it was before; that it was evidently becoming phlegmonous, and that the extremities of the cords that had been dry were now moist. The fluid which ran from the scarifications was less transparent, and more fluid. The head of the animal was more elevated, more moveable. The animal did not crouch so much, and endeavoured to eat.

On the second and following days I repeated the same treatment, excepting the bleeding; diminishing every day the frictions and the lotions. On the second day there were four frictions; on the third day, three; on the fourth, two; and only one on the fifth; and they were not applied with so much severity. I endeavoured to adopt my measures to the intensity of the case. The scarifications and cauterizations likewise bore proportion to the extent of the tumour, and the rapidity with which it increased.

One of the indications of improvement, and which never deceived me, was the appearance of a white puriform matter round the pledgets introduced into the wound made in scarifying and cauterizing when they were withdrawn, and after, by the means of them, I had introduced the ammoniacal liniment to the very bottom of the sinus or ulcer.

The suppuration of the cords, and the scarifications being established, the tumour resolved itself like an ordinary phlegmonous one: the horse recovered his spirits; I caused him to be exercised two days after he began to get better, and he gradually returned to his former food and habits.

The cuticle and the hair which covered the swollen parts always came off after this mode of treatment, but they were soon entirely removed.

The combinations of peritonitis and pleurisy were very rare in horses subjected to this mode of treatment. I only perceived them in twenty horses, and they died: and, in fact, I only lost

twenty horses out of one hundred and eighty; whereas, by the antiphlogistic mode of treatment I lost twenty out of twenty.

I ought, however, to acknowledge that, notwithstanding the efficacy of these remedies, and the rapid disappearance of the severer symptoms, the horses that recovered were very much reduced, and it was long before they regained their full condition. I attribute this long convalescence less to the mode of treatment than to other circumstances altogether independent of it.

Journal Theor. et Prat., Juillet 1833.

The Cure of Hydrophobia by the Vapour Bath.

M. Buisson was called to attend on a woman who was supposed to be hydrophobous; in fact, she exhibited all the symptoms of this disease, and had been bitten by a rabid dog forty days before. She, however, attributed her illness to another cause. At her earnest entreaty she was bled, but she died two days afterwards. M. Buisson, who had his hands covered with blood, dried them with a towel that had been used to wipe the foam from the mouth of the patient. He had at that time an ulcer on one of his fingers, the consequence of which imprudence he thought that he should avoid by washing his hand carefully with pure water.

On the ninth day, being in a cabriolet, he all at once felt pain in his throat and his eyes; his body seemed to grow suddenly light, and he felt as if he could leap to a prodigious height. His skin was so morbidly sensitive, that he said he thought he could count every hair without looking at them; and the impression of the air, and the sight of polished substances, caused him a most painful sensation. Saliva ran continually from his mouth; he felt a desire to run at and to bite, not only human beings but animals. He drank with difficulty, and the sight of water gave him great uneasiness.

He concluded that he was seized with hydrophobia, and he determined to destroy himself by suffocation in a vapour bath. He pushed the heat of the bath to 108 degrees, but he was surprised to find that, after awhile, he seemed to have got rid of all his ailments. He came out of the bath well, ate a hearty dinner, and drank his usual quantity of wine.

Since that time he says that he has treated in the same way more than eighty persons bitten by mad dogs, and in four of whom hydrophobia had developed itself. They were all cured, with the exception of a child of seven years of age, that died in the bath.

The treatment which he prescribes for persons bitten by rabid dogs is, to take a certain number of vapour baths, and then en-

velope themselves in flannel, and cover themselves with a feather bed, in order to excite copious perspiration, and to encourage it by drinking a warm decoction of sarsaparilla.

M. Dupuy adds, that, next to the discovery of vaccination, there cannot be one more valuable than that of a specific for such a dreadful malady as hydrophobia; and he expresses his hope that future experience may confirm that of M. Buisson.

Seance de l'Academie des Sciences, Sept. 23, 1833.

Miscellanea.

The Arab and his Steed.

My beautiful! my beautiful! that standest meekly by,
With thy proudly arch'd and glossy neck, and dark and fiery eye;
Fret not to roam the desert now, with all thy winged speed,
I may not mount on thee again—thou'rt sold, my Arab steed!

Fret not with that impatient hoof; snuff not the breezy wind;
The farther that thou fliest now, so far am I behind:
The stranger hath thy bridle-rein—thy master hath his gold—
Fleet-limbed and beautiful, farewell! thou'rt sold, my steed, thou'rt sold.

Farewell! those free untired limbs full many a mile must roam
To reach the chill and wintry sky that clouds the stranger's home;
Some other hand, less fond, must now thy corn and bread prepare,
The silky mane I braided once must be another's care!

The morning sun shall dawn again, but never more with thee
Shall I gallop through the desert paths where we were wont to be:
Evening shall darken on the earth, and o'er the sandy plain
Some other steed, with slower step, shall bear me home again.

Yes, thou must go! the wild free breeze, the brilliant sun and sky,
Thy master's home—from all of these, my exiled one must fly;
Thy proud dark eye will grow less proud, thy step become less fleet,
And vainly shalt thou arch thy neck thy master's hand to meet.

Only in sleep shall I behold that dark eye glancing bright;
Only in sleep shall hear again that step so firm and light;
And when I raise my dreaming arm to check or cheer thy speed,
Then must I, starting, wake to feel,—thou'rt *sold*, my Arab steed!

Ah! rudely then, unseen by me, some cruel hand may chide,
Till foam-wreaths lie, like crested waves, along thy panting side,
And the rich blood that's in thee swells, in thy indignant pain,
Till careless eyes, which rest on thee, may count each started vein.

Will they ill use thee? If I thought—but no, it cannot be—
Thou art so swift, yet easy curb'd, so gentle, yet so free;
And yet if aptly, when thou'rt gone, my lonely heart should yearn,
Can the hand which casts thee from it now command thee to return?

Return! alas, my Arab steed! what shall thy master do,
When thou, who wert his all of joy, hath vanish'd from his view!
When the dim distance cheats mine eye, and through the glittering tears,
Thy bright form, for a moment, like the false mirage appears.

Slow and unmounted will I roam, with weary steps alone,
Where with fleet step and joyous bound thou oft hast borne me on;
And, sitting down by that green well, I'll pause and sadly think,
'Twas *here* he bow'd his glossy neck when last I saw him drink!

When last I saw thee drink!—Away, the fever'd dream is o'er;
I could not live a day, and *know* that we should meet no more!
They tempted me, my beautiful! for hunger's power is strong,
They tempted me, my beautiful! but I have lov'd too long.

Who said that I had given up? who said that thou wert sold?
'Tis false—'tis false, my Arab steed! I fling them back their gold!
Thus, *thus* I leap upon thy back, and scour the distant plains:
Away! who overtakes us now shall claim *thee* for their pains!

The Hon. Mrs. Norton.

TO CORRESPONDENTS.

Our correspondents who are anxious that their communications should immediately appear, would do as much kindness by sending them earlier in the month.

We have received a letter in a disguised hand, yet one that we have seen before, and should like oftener to see, *in an honest way*, bearing the signature of "Fair-play;" but the assumed name does not suit the tenor and object of the epistle, and that the writer's conscience must tell him.

We were really ignorant of the death of "Poor old Ben Bowles, one of the fathers of the profession;" and, although we receive the story of our "friend," *cum grano salis*, that his departure "produced as much consternation in the town of Cambridge as if the Chancellor of the University had died," yet we believe him to be "a man respected in all he did and by all he knew," and we thus render this tribute of respect to his memory; but we have yet to learn what he contributed to veterinary science, or what paramount claim he had to a niche in our obituary. As for the banter which follows, it has neither truth nor candour, nor the writer's own honest feelings, as its base. There was a sad mistake in the signature here.

With regard to the second subject of his letter—the plan which we are pursuing was adopted after mature deliberation; nor are we to be driven from it by assertions and *insinuations* which "Fair-play" or "Foul-play" here, would, in his own character, and which best becomes him, treat with sovereign contempt.

As to the Lieut. R. James, once a student, but *not*, as he describes himself, a "graduate," of the Royal Veterinary College, we have procured some of his "Blister Ointment," and, like all these pretended discoveries, it is no discovery at all. It consists of the Spanish fly, very finely triturated, more common liquid turpentine and less resin and greasy matter than these ointments usually contain, plenty of oil of origanum, and some sulphuric acid. With the exception of the last ingredient, its value consists in the absence of spirit of turpentine, and corrosive sublimate, and euphorbium, and all those devilish ingredients which unnecessarily torture and generally blemish the horse. Every good practitioner knows well enough that he wanted nothing but the fly in order to effect every good purpose, and escape every annoying and bad consequence. But why degrade THE VETERINARIAN by noticing such things?

Y.

THE

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MR. YOUATT'S VETERINARY LECTURES,

DELIVERED AT THE UNIVERSITY OF LONDON.

LECTURE XLI (continued).

The Tenth or Cerebro-visceral Motor Nerve.

THIS is composed of fibriculi placed in the same line, and still more posteriorly. They unite,—they form or pass through a small ganglion, and they have a sheath distinct from the glosso-pharyngeal, although they escape with it through the same aperture, the foramen lacerum basis cranii. From its strangely wandering path it has been called by some the *par vagum;* and by others the *pneumo-gastric*, on account of its being principally concerned with the functions of respiration and digestion. We shall see, however, that it has a great deal more to do,—that it is connected with organic life generally,—that it governs or influences every visceral function,—that it seems to preside over the motor or mechanical part of that function, and, therefore, as the only visceral nerve derived *directly* from the brain, I have ventured to withhold from it the titles of respiratory or pneumo-gastric, as indicating only a part of its function, and to term it the *cerebro-visceral motor nerve.*

Its Course.—On escaping from the cranium, we find it becoming connected with every neighbouring nerve,—the great organic, the glosso-pharyngeal, the spinal accessory, the seventh, and the upper cervicals, and forming an intricate plexus of nerves, which we can scarcely unravel in dissection, but for which we can account when we consider the importance of the parts at which we are arriving. Having contributed to form this plexus, it enters into the same sheath with the *great organic*, and in company with, and on the outer side of it, and also distinguished from it by its greater size and firmer consistence, and having also the carotid artery on the inner side of the great organic, it pursues its course down the neck.

The Course of the Nerve continued.—I will endeavour rapidly to trace the course of the trunk of this nerve, and its principal ramifications; and here I would again refer you to the accurate delineation of the nervous system by Mr. Percivall; while those of you who are acquainted with the French language will also study with pleasure the equally accurate, although somewhat differently arranged description of M. Girard. I shall have little to say of the comparative anatomy of this nerve in our different patients. The function seems to be clearly the same in all,—the motions of the various parts connected with organic life are the same,—and the only difference in the nerve will consist in the number and distribution of some of its fibriculi.

Anastomosis with the great Organic.—The first anastomosis is with the great organic before they are united in the same sheath. Some tell us that it helps *to form* the superior cervical ganglion. I am rather disposed to say, that it receives filaments from the great organic: but, at all events, if our surmise should appear to be well founded, that these are the nerves of organic life, the one the *motor*, and the other the *secretory* and the *nutritive* one (as the nerves of the central columns of the chord being those of animal life, are the one the motor and the other the sensitive nerve), we can easily imagine that anastomosis would soon take place between them, and that we should soon find them in one common sheath, and at length blending together in one grand central plexus.

The Pharyngeal Branch.—This is a very complicated one, and before it is fairly distributed over the pharynx, it has connected itself with the pharyngeal branch of the last nerve, and with a branch likewise from the spinal accessory. The pharynx, although, as I have already stated, comparatively deserted in the distribution of nervous influence from the spinal chord, is richly imbued with organic power, for the act of deglutition is an important and a complicated one: it must be performed, as I have said, long before the mind can influence the action of the body, and it requires the co-operation of many muscles. An attention to what takes place during the act of deglutition will convince us how difficult it is to arrest the progress of the food when it has once entered the pharynx, and the constrictors are pressing upon it: and, in fact, it is almost impossible to produce the act of deglutition when there is nothing in the pharynx to stimulate the organic nerves to action.

The Œsophageal Branch.—The food having once entered the œsophagus, is delivered over to the influence of the pure organic nerves; and as the contraction of the fibres of the constrictors of the pharynx forced the food along that canal, so the contrac-

tion of the fibres of the œsophagus causes the pellet to descend towards the stomach. The animal has little to do with the force, or even the action of these fibrils. If the pellet is too large, and cannot be driven on by the proper muscles of the œsophagus, even when they are excited to forcible or spasmodic action by the continuance of their natural stimulus, the pressure of the food, no act of the will can avail aught; and mechanical means alone, as the swallowing of some liquid, or the attempted deglutition of air, or, as the last resort, the probang for the human being, and the probang alone in the quadruped, will be effectual in removing the obstruction. In the action of this branch we recognize the organic principle alone.

Arterial Branches.—Next are branches to the carotid, ramifying upon, and winding around it, and forming a complicated plexus, particularly observable at its bifurcation. I will not enter here into the disputed question of the power of the arteries, but I plainly recognize a muscular coat, thin and weak, near the grand central machine, but increasing in thickness and strength as I recede from the heart. It doubtless has its peculiar action, or it would not surround the artery. What that precise action is, I will not here inquire; but the vessel is indebted for it exclusively to the agency of these nervous branches. No spinal influence can be traced to these vessels, except by the most circuitous anastomosis: it is the organic principle which is here also at work.

The Laryngeal Branch.—The branches to the larynx are very large, and can scarcely fail of being recognized in your dissections. They cross the carotid artery, wind down upon the side of the pharynx, and, in order to reach the larynx, pass through an aperture on each side at the base of the cornu by means of which the hyoid bone articulates with the thyroid cartilage; they then ramify upon those muscles of the larynx which are concerned in the constriction of the glottis. This branch anastomoses with another derived also from the spino-cerebral, and at which we shall presently arrive, and the fibres of which are principally expended on the dilators.

Course of the Nerve down the Neck.—I now trace the path of the cerebro-visceral down the neck, still in the same sheath with the great organic, and in company with the carotid artery. There are no branches given to the neighbouring parts, for there are none here that are necessary to, or that can be well employed in, the purposes of organic life; but there are almost innumerable filaments of communication between the spino-visceral and the great organic, more closely allying them together, although not identifying them; and preparing them for the completion of the all-important functions which they have soon to discharge.

At the bottom of the neck the two nerves separate; and the cerebro-visceral climbs above the carotid artery, and is found between it and the axillary, and, accompanied by them, enters the cavity of the chest between the two first ribs.

The Cerebro-visceral in the Thorax.—The arrangement of the great viscera within the thorax, the inclination of the heart to the left side, and the great bulk of the right lung, give a different direction to the nerve on the opposite sides of the chest. Both are found within the superior mediastinum, but the right nerve continues to follow the trachea; it passes over the root of the right lung, and reaches the under surface of the œsophagus. The left nerve accompanies the anterior aorta, and, crossing the root of the posterior aorta, also reaches the œsophagus; and both of them enter the abdomen attached to the œsophagus. The divisions of this nerve within the thorax deserve close attention.

The Tracheal Plexus.—First there are many branches, united with a still greater number from the great organic, entwining round the lower part of the trachea. The transverse muscle has not yet quite ceased to exist; nor the interposed ligamentous muscular band connecting together the rings of the trachea: while there is a new and complicated mechanism of cartilage at the commencement of the bronchial tubes, and also considerable motion or change of situation in this part of the respiratory canal during the inflation and subsidence of the lungs. We may consider this plexus, so far at least as this nerve is concerned, as presiding over and regulating all these motions and changes. Some branches are next given off to the heart, but more of these hereafter.

The Recurrent Nerve. — Somewhat differently originating on the opposite sides of the chest, a branch is next given off from the cerebro-visceral, which takes a retrograde course; it escapes from the chest, and climbs up the neck as far as the larynx. From this singularity of direction it is called *the recurrent nerve.* It gives, at its commencement, fibres both to the pulmonary and carotid plexuses, and to the posterior cervical ganglion of the great organic; and then, as it pursues its singular course up the neck, it sends many filaments to the œsophagus and to the trachea. The first seems to be much indebted to it for the power of its muscular coat; and the latter owes to it much of the action of the transverse muscle, whether employed in tightening and smoothing the lining membrane of the trachea in order to facilitate the passage of the air, or in preserving the arch of the windpipe from alteration of form, or from laceration. The power of the ligamento-muscular substance interposed between the rings of the trachea must also be traced to the same source.

Expending itself on the Larynx.—Having reached the upper part of the trachea, the recurrent nerve terminates in ramifications on the dilator muscles of the larynx, and also on the membrane of the glottis. This is a very important branch; the dilators are the muscles most concerned in the adaptation of the larynx to the inspiration and expiration of air in common or in hurried respiration, and also in the production and management of the voice. They are numerous and powerful, while the closing of the laryngeal aperture is effected by the elasticity of the cartilages, assisted by one small muscle alone.

The Explanation of the Retrograde Course of this Nerve.—We can see, then, some reason why the branch which is to accomplish, or to aid in the accomplishment of, the most important division of these processes, should take this singular course. Being given off from the very base of the trachea, climbing up on each side of it, yielding filaments to it at almost every assignable point from its bronchial divarication to its laryngeal termination, and its ultimate fibres diffused over the larynx, there results a sympathy, a co-operation between every part of the respiratory tube, best adapted to produce, and which alone can secure, the perfection of this portion of the respiratory function.

The Effect of the Division of the Laryngeal and Recurrent Branches.—When speaking of the respiratory system, and the mechanism of the voice, I described the effects produced by the division of the laryngeal and recurrent branches. When the laryngeal branch is divided, the voice is changed and rendered hoarse, for the dilators continue to act, but the power of the constrictors is lost. When, on the other hand, the recurrent branch is cut, the dilators have lost their power, and the constrictors alone act; the glottis is closed, the voice lost, and the animal threatened with suffocation. The power of deglutition likewise is materially affected by the division of these nerves: when the recurrent nerve is divided, and the constrictors alone act, the glottis is closed, and the food passes over without danger; when the laryngeal is divided, the constrictors cease to act, the dilators expand the glottis, a portion of the food often enters the windpipe, and distressing cough, if not suffocation, ensues.

The Pulmonary Plexuses.—These are very remarkable ramifications of the cerebro-visceral nerve. They are given off on each side, both from the main trunk of the nerve and the recurrent branch, and are divided into two portions; the *superior* one is partly given to the pericardium, and entwines around the pulmonic arteries and veins, and accompanies them into the substance of the lungs; the *inferior* plexus is more attached to the bronchi and the bronchial vessels, and can be satisfactorily traced along

these tubes and vessels to their termination in the lobuli of the lungs.

Function of these Branches.—There have been contradictory accounts of the consequences of dividing the cerebro-visceral nerve, with reference to the function of respiration. In the generality of cases, and when the nerve has been divided about the middle of the neck, the respiration has almost immediately become quickened and laborious, and the animal has shortly died: post-mortem examination has afterwards shewn that the vessels of the lungs are gorged with blood, and the bronchial cells clogged up with a serous or mucous effusion. Although, therefore, I have stated in a former lecture, that the lungs are passive in the double act of respiration, or that their only active power consists in the elasticity of their cellular membrane and air-tubes; that they yield to the pressure of the diaphragm and the ribs in the act of expiration, and, that pressure being removed, the cells and the tubes start again, and resume their previous form and caliber, yet this must be received with some limitation: there is an inherent power in the bloodvessels to hasten the circulation of the blood through them, and also in the bronchial tubes to expel not only the air, but the secretions which they contain. This is derived from the cerebro-visceral nerve, and when the influence of that nerve is removed, the vessels remain filled with blood, and the bronchial tubes with serum. In these respects the cerebro-visceral is certainly a motor nerve.

Different Results of the Division of this Nerve.—There is a very considerable difference, however, in the result of these experiments. When extreme difficulty of breathing has been produced by the division of the nerve, it has been immediately relieved by making an opening into the trachea; shewing that a great deal of the disordered function, and perhaps the death of the animal, was produced by the closing of the glottis. The result was also different according to the place in which the division was made; if high up in the neck, the effect was striking and satisfactory; but if close to the formation of the plexus, the disarrangement of the function was considerably less, and in some cases, very slight. There is not much difficulty in accounting for this, when we consider the frequent anastomoses between the two visceral organic nerves, and the share which the great organic nerves take in the formation of all those plexuses. If the division is high up, there will be few or no anastomoses, and few or no fibrils of the cerebro-visceral will reach the plexus through the medium of the great organic; if the division is close upon the plexus, the communication through the main trunk may be cut off, but it may be still kept up by means of many anastomosing fibres, through the medium of the great organic. In one instance, the animal lived three days after the

division of the nerve, although that division was made in the neck; but there was sadly laborious breathing and frequent vomiting, and at length he died completely exhausted.

The Cardiac Plexus.—The cerebro-visceral nerve furnishes one more considerable, but somewhat mysterious plexus, within the thorax, and that is about the heart. As soon as the nerve on each side has entered the thorax, small branches are directed to the base of the heart, but afterwards, and after the giving off of the pulmonary branches, a very considerable one proceeds from the right nerve towards the heart, and this separating into two as it approaches the base of the heart, is distributed to each auricle, and to the bloodvessels of the two divisions of the heart. Now, gentlemen, I have very little proof of the agency of this nerve as a motor one as it regards the heart; and, comparing the cardiac with the pulmonary plexus, and, by-and-by, with the gastric one, I find that this organ is sparingly supplied with nervous fibrils; and I cannot help attributing some importance to the circumstance which I have just pointed out to you, that the cardiac plexus is principally made up of ramifications from the *right* nerve alone. I presume not, in the present state of veterinary knowledge, to explain this; although I can guess at the reason of it, viz. that this central and all-important organ is endowed with a contractility of its own, independent of nervous influence, and that the character by which it is distinguished from every other part of the frame is that of inherent and inexhaustible contractility. Then I can conceive that the influence of this motor nerve shall be little evident, or, in the usual working of the machine, comparatively little felt; yet at all times existing, and connecting the motions of the heart with the changes and the wants of the general system, or the diseases of particular parts, and to such a degree that, inour patients, who cannot tell us the situation or the nature of their maladies, the variable character of the pulse is, although too little studied among us, the most valuable of all the indications of disease. Thus far I can fancy (for I confess, gentlemen, we have no direct proof, and we are wandering where I seldom dare to venture, on the tempting but dangerous paths of mere theory), that these nerves are here maintaining their character in controlling the action of the heart according to the changing circumstances of health and disease, and even of mental emotion; and when I regard the other supposed power of the cerebro-visceral nerve—when I look to the sensitive ganglion as well as to the motor origin, I can comprehend a thousand sympathies, and perceive how this central machine is bound up with the system generally, and forms with it one connected whole. In my next lecture we will follow this nerve into the abdomen.

ON THE GRIEVANCES OF THE VETERINARY PROFESSION.

By Mr. W. C. Spooner, *V.S., Winchester.*

The human mind delights in novelty: we soon get tired of viewing the same object, and are ever ready to apply the term *hacknied* to the repeated discussion of the same topic; and yet, in spite of this, I am just about to pen some observations on that oft-debated subject, viz. the Grievances of the Veterinary Profession. That our profession has not yet obtained that root and confidence in the public mind which its importance merits, I think is acknowledged by nearly every practitioner; and few, I trust, will deny, that union and concord afford the surest means of attaining it. Some time since a great stir was made with a view of obtaining seats for veterinary surgeons at the board of examiners; and it seemed to be imagined by some, that the attainment of their object would be the panacea for all our evils, the cure for all our grievances; but though I believe that it would be extremely desirable, yet I still think that the benefits from it would be but trifling, if our requests were to cease here, or to stop short of any thing but *legislative protection.* And here I would venture to express an opinion, though it may be both isolated and erroneous, that I cannot think that the metropolitan veterinarians acted wisely in not acceding to the plan of the examining committee for forming a double board*. They should, I imagine, have laid hold of this concession, and it would have afforded them a vantage ground for obtaining other desirable objects. I, for one, should be sorry to see the *present* examining committee *done away* with; they are, I think, fully competent to examine the pupil on many very important branches

* Our correspondent will recollect, that at the adjourned meeting of "The Metropolitan Veterinarians" it was, at the recommendation of Mr. Coleman, carried unanimously, that "A separate examining veterinary committee was expedient;" that at a subsequent general meeting, at which much unpleasant and disgraceful altercation was displayed, this resolution was not rescinded; but that it was at a third meeting (at which, disgusted at the scenes they had witnessed, neither of the Percivalls, nor the Fields, nor the Turners, nor Henderson, would attend, and from which Messrs. Goodwin, and Langworthy, and Marshall, and Mavor, and Symonds, and Fenwick, and Cooke, and Cannon, and several others, still led thither by their zeal in a good cause, were driven by brutal violence, and at which a contemptible minority, certainly not more than half a dozen "metropolitan veterinarians," remained) that the proceedings of the former nights were quashed, and it was determined that this separate examining committee was uncalled for. The indelible disgrace of that meeting, on whomsoever it may fall, does not, cannot attach, to "the metropolitan veterinarians."

Y.

of study, and it only needed a sprinkling of practitioners to make the board complete; but whether this additional body was to be separated from, or connected with, the old one, I should have cared but little. But supposing the board was to be altered, and the examinations rendered more difficult, what would be the result?—but that a greater number than at present would go to the College for a few months, and then set themselves down in some town or district, and style themselves Veterinary Surgeons. This is the main evil that at present exists, and it is something to counteract the peculiar advantages these illiterate men possess, that it should be *our* object to obtain. A farrier will often outlive a veterinary surgeon in any particular place, because the latter, unless after a time he can obtain a sufficient income to support his respectability, will leave it for some more favoured spot; whilst the former can eke out his existence on a pittance, just as animals that are lowest in the scale of creation have the fewest wants and are the most tenacious of life; and this enables him effectually to compete in price with his professional opponent. Of all the obstacles opposed to the veterinary surgeon's progress, *ignorance* is the greatest, and the most difficult to surmount: like the hundred-headed monster of antiquity, as fast as one head is destroyed another springs up in its place. The less people know of horses and their diseases, the less they think there is to acquire; and many seem to imagine, that because a man has been accustomed to curry the horse's hide, he must therefore be sufficiently acquainted with his internal structure, and competent to treat his maladies. They have an idea that theory and practice are incompatible; that, in proportion as a man's scientific acquirements are great, his *practical* knowledge must in the same proportion be deficient; and yet they are very ready to take advantage of the V.S., if they fancy that he makes the slightest error. I was conversing a short time since with a gentleman (a retired army captain) on this subject, and I well remember his remarks: he said, "I have often been surprised at the unreasonable expectations people have from members of your profession: they really expect you to overrule Providence, and to circumvent nature, and are dissatisfied if you cannot do it; whilst the ignorant farrier is seldom blamed, whatever he does; he has a ready excuse to make for all his bungles, and if he cannot find out where a horse is lame, he will swear boldly that it is in the shoulders." Some little time since I was requested to look at a horse that had been lame and useless for upwards of a twelvemonth: I found the bones of the foot quite carious, so much so, that I could pass a probe through the foot from the coronet to the heels: of

course, I desired him to be destroyed. The history of the case was this:—He had been under the care of a neighbouring farrier of some repute, who never bled him from the feet, or poulticed him, or used any topical application whatever; but about three months after the horse was first taken ill, he discovered that he was lame in the feet, and recommended him to be turned out. The owner told me the horse was worth at least £30 prior to his illness, and his loss was, consequently, between £40 and £50; yet, notwithstanding this, he still employs the same man. This farrier was asked by a gentleman, a little time since, the nature of a splent: his answer was, "that 'twas a *rottenness* of the bone—that it went *clean* to the *marrow*—that firing was the only thing to kill it." But of all classes of men that have the combinations of ignorance and presumption in the greatest degree, I think grooms possess these qualifications the most: there are many exceptions, no doubt; but such I believe is the usual fact. A friend of mine, a tradesman, was shewn round a gentleman's stud by his head groom, who pointed out a very fine horse as being "stitched in his wind." The tradesman said he often heard of horses being broken winded, and asked him what was the cause? The groom replied, "*'Tis the bladder, sir: the wind gets to the bladder, and this breaks the wind.*" My friend said he could scarcely refrain from laughing; for though he knew nothing of horses, he knew that the bladder had nothing to do with the wind. This groom has the unlimited confidence of his master, and the sole care of a valuable stud, whether in sickness or in health. I have always found that those gentlemen who knew most about horses and their diseases, were the best friends of veterinary surgeons, the least confident in their own knowledge, and the most scrupulous of their groom's acquirements. The knowledge they possess serves as a light to shew them how much more there is to learn, and thus they are more disposed to foster talent and encourage worth. Almost every veterinary surgeon is sure to have a host of enemies, who, having the opportunity of circulating slander in circles where he does not mix, are withheld by no scruples of conscience or honour; and thus propagate falsehoods which too many in higher situations are often disposed to credit, but which the practitioner is afforded no opportunity of contradicting. Then again, too, the very nature of his practice conjures him up foes: he examines a horse, finds him unsound, and the dealer who was selling him becomes his bitter enemy; or, if the vender is a gentleman, he feels rather offended with the practitioner. The following is a recent fact:—A horse-dealer and livery stable-keeper had his horses shod at the forge of a veterinary surgeon. A neighbour-

ing gentleman sent a horse to this veterinary surgeon, desiring him to examine him minutely as to soundness. The veterinary surgeon (first desiring the servant not to tell him whose horse it then was) proceeded to examine him, and soon discovered a cataract in the near eye: he wrote to this effect to the gentleman, and the result was, that the dealer, after railing at the veterinary surgeon, the profession altogether, and Mr. Field in particular, withdrew his shoeing custom from the forge. *Ab uno disce omnes.* Now the farrier is in little fear of this result—his reputation is in no danger: his habits, his ignorance, and his inclination, all dispose him to befriend the dishonest dealer, and for his opinion perhaps he gets doubly paid.

But I am afraid I shall occupy too much of the space of THE VETERINARIAN, if I do not endeavour to close my rambling remarks: in conclusion, then, let us sum up our grounds for claiming the protection we require. The veterinarian goes to considerable expense in furnishing himself with the best and newest instruments; he communicates with his brother practitioners by means of periodicals and otherwise, and thus derives the advantages of their experience as well as his own. His knowledge of anatomy enables him to perform many operations that the farrier cannot attempt; and his dissection of morbid subjects enables him at once to point out the particular part diseased, in cases of lameness where no external symptoms are visible. He is often required to protect the public from fraud and deception in the purchase of horses, and to explain the nature of disease in courts of law. A knowledge of anatomy and physiology alone enables him to do this. Unless, therefore, he possesses this knowledge, and, added to it, an acquaintance with the nature and effects of medicine, it is impossible for him to treat the diseases of the horse either scientifically or successfully. For these benefits rendered to the public, we require some protection in return; and in consequence of its not being afforded, many men of talent and ability are prevented from entering the profession, and many such that have entered feel themselves injured and degraded by being put on a par with the most ignorant characters. Many towns and large districts of country are abandoned to the farriers and blacksmiths, the veterinarian not being able to find sufficient practice to support him; and thus numbers of animals are lost that might have been saved by superior skill. These, then, are our reasons for claiming from the legislature that protection which other professions enjoy; for if it was desirable to institute the Veterinary College in order to furnish the army and the country with competent practitioners, it is equally desirable for

the good of the country, the honour of the College, and in justice to veterinary surgeons, that some advantages should be possessed by those who have proved their competency by undergoing the necessary ordeal. Until this is done, the present evils, instead of diminishing, will accumulate. The increased term of study before a pupil can get a certificate will be of little use, for the groom, as heretofore, getting tired of *sarvice*, and having scraped a few pounds together (enough to pay his admission fee), will spend a few months at the College, and then return into the country a self-dubbed veterinarian. Here, with cheapness for his motto, and impudence supplying the lack of knowledge, a similarity of habits procure him the sympathy of his brother grooms, and their masters acting, perhaps, on the mistaken principle of "penny wise and pound foolish," afford him sufficient encouragement to injure materially the regular practitioner.

The evils which the medical profession seek to remove are trifling compared to ours, for people no longer trust their lives or limbs to the care of barbers; but the noblest of domesticated animals are too frequently consigned to the dogs through being committed to the care of men much less intelligent than the barber-surgeons of former times. I trust, therefore, that in due time some exertion will be made towards relieving our profession from the incubus that now bears it down; and that the cause of science will not be abandoned by its friends, to be smothered in the mists of ignorance raised by its numerous foes.

A SINGULAR DISLOCATION AND FRACTURE.

By the same.

On the 16th ult., a horse shied in passing a coach, and, turning round suddenly, the off hind leg became entangled between the wheel bar and fore wheel. I saw the animal shortly after the accident, and on examination found an extensive dislocation of the inferior articulation of the hock. I could feel distinctly (through the skin) the upper surface of the large metatarsal bone, and I suspected that some fracture accompanied it, though I could detect no crepitus. The owner not being present, some attempt was made to reduce the dislocation by the assistance of pulleys, but more by way of experiment than with the expectation of success. The horse was destroyed, and I found the joint in the following state:—The lateral ligaments were ruptured, and the capsular penetrated by the upper edge of the cannon bone. The upper part of the suspensory ligament was considerably

lacerated, as well as the large ligament running from the os calcis to the ossa metatarsi: the external small metatarsal bone was torn from the large throughout nearly its whole extent; and about half an inch of the superior part of the os metatarsi internum was fractured transversely.

Winchester, April 19th.

A CASE OF RABIES IN THE HORSE.

By Mr. C. Marshall, *V.S., London.*

On Thursday evening, the 17th of April, 1834, a message was sent to me late in the evening by Mr. Reynolds (the owner of the animal), that the old horse was very ill, and had something sticking in his throat. I was from home, and could not attend until Friday morning about seven o'clock. I found the horse foaming, breathing very laboriously, his tail erect, screaming dreadfully at short intervals, striking the ground with his fore feet, and perspiring most profusely. He would get into the manger, and strike his head against the wall, cringing and drawing himself up as though there was some obstruction in the œsophagus. He was continually biting the top of the stall, and when I approached him he tried to run at me. I considered him to be rabid, and advised Mr. Reynolds to have him destroyed. The pistols were got ready for his destruction; but before we could use them he broke the top of the manger, and came out of the stall with it hanging to the halter. He made immediately towards us, but, as we succeeded in getting out of his way, he turned into the next stall, and died instantly.

I inquired if they had any idea of his having been bitten by a dog, but they had not; I also inquired if they had noticed any thing unusual about the horse previously to the attack. They informed me that his spirits had been better than usual; that he appeared stronger, and that a lameness under which he laboured had left him for three or four days. He was at work within four hours of his seizure.

I examined him immediately after death, and found the upper and back part of his tongue, epiglottis, and the membrane lining the windpipe, in a high state of inflammation; the lungs also much gorged with blood. The brain, stomach, and every part of the viscera, were in perfect health.

ON CATARACT.

By Mr. HARRIS, *V.S., Bromyard.*

[Mr. Harris had modestly affixed the signature of "A Veterinary Surgeon" to this letter; but, although the confession of his name added to this was a satisfactory voucher so far as we were concerned, yet, considering the importance of the facts communicated, we have, in justice to the public and to Mr. Harris himself, ventured to affix the name of our correspondent.]

IT has been with me a cause for wonder and regret, that, of the many interesting subjects which have occasionally occupied the pages of THE VETERINARIAN, and often involving disputed or unsettled points, few have been discussed in the manner which their importance demands. Cataract, I am glad to see, is an exception. Some valuable papers have appeared on it. Nevertheless the subject is not exhausted; and therefore, without comment on what has been written, or fully recording my own opinion on the subject, I send you three cases which have occurred in my practice, and which supply some points that are not yet, as I think, filled up.

A bay mare, now coming five years old, when first broken, two years ago, was accidentally submitted to my inspection. I perceived two small cataracts in the off eye. After close inquiry I could not hear that any symptoms of inflammation had been observed; and from that time until now, although she has been more than commonly exposed to the exciting causes of ophthalmia, namely, alternations from warm stables, corn, and severe work, to turning out in all seasons when not wanted, the disease has not only not progressed, but when, a week ago, she came under my treatment for lameness, there was but one cataract remaining.

An otherwise healthy foal was observed to have defective eyes, and I was requested to see him on, I think, the second day after birth, when I discovered a large cataract in the centre of each eye (without the slightest appearance of inflammation), and which nearly destroyed vision in a strong light, and caused him to roam about and turn his head in different directions, in order to catch a sight of the objects around him; but when he was removed to a dark stable he appeared satisfied, and like other foals. This I thought a good case for an operation; but before I had procured instruments, and was otherwise prepared, he was purposely destroyed, or, as I was informed, carried off by some disease. I could never get at the perfect truth about this; but

we have here, undoubtedly, a proof of the formation of cataract without inflammation, or that ophthalmia may sometimes affect the fœtus in utero.

My third case is that of a half-bred gelding, which had ophthalmia when from two to three years old, and a cataract was the result. I had opportunity of examining his eyes several times within the next two or three years. The cataract was evidently diminishing, and when, some months afterwards, I looked for it, it was gone. I should perhaps farther state, that, except at the beginning of the disease, nothing was done in the way of treatment; and that not one of three or four owners he had in the time, among whom was a surgeon, knew of the cataract.

A CASE OF WORMS IN THE ARTERIES.

By the same.

YOUR last number contained a paper on two diseases which are met with in India, namely, worm in the eye and kummeree, neither of which have been, I believe, recognized with us; but I have occasionally met with disease (from the accounts I have read) somewhat similar to the latter, and occasioned, in some instances, as I thought, by a cause as extraordinary as the former, namely, the existence of worms in the arteries. I subjoin a case:—

A yearling colt, that had been weaned at Michaelmas, and well fed through the winter, was very low in condition in the spring, and his old coat remained fast on when other colts were parting with theirs. He had also, for some time, been observed to pass his urine involuntarily, and particularly when made to trot. His penis was hanging down, and, to appearance, paralyzed. He was evidently weak behind, but there did not appear to be absolute paralysis of the posterior extremities. He was well fed; was physicked, and had setons and blisters on his loins, and tonic medicines were administered, but without any improvement: at length he became unable to raise himself when down, and had indications of affection of the brain, as tearing up the grass and earth within his reach, without attempting to masticate or swallow any. He was then destroyed, and immediately examined.

I found a slightly unnatural degree of vascularity or fulness of the vessels about the pineal gland, and, as I thought, a little more fluid than natural within the membranes of the spinal marrow, and also between the theca vertebralis and the bony walls of the spine. There was also a little effusion within the cellular mem-

brane generally. The contents of the chest and abdomen appeared healthy, with the exception of the bladder and ureters; the former had contracted upon its contents, and the latter were as large as a little finger. I was just abandoning my search, having discovered no satisfactory cause for death, when I observed a bulbous appearance at the part where the aorta gives off its branches to the kidnies: on cutting into this, I discovered several worms and a fungous substance nearly obliterating the artery. I regret that I did not examine the mesenteric arteries, in which I have in other cases found worms, and where the symptoms of the complaint were similar: I should, perhaps, have found here an additional explanation of the unthrifty condition of the animal.

The worms were about an inch in length, small, transparent, and slightly red from the blood they contained. I have never seen the least motion in them, and they all have been of the same size.

A CASE OF EXFOLIATION OF THE COFFIN BONE.

By Mr. J. P. Cheetham, *V.S., Edinburgh.*

On the 23d of October, 1833, a bay horse was brought to me from Brighton, and when I saw him the poor animal was walking upon three legs. The history I received of the case was, that he had had a sandcrack in the inside of the crust of the off fore foot.

I had the shoe removed and the crack pared out, but there was no purulent discharge. On farther examining the sole, a small black spot shewed itself, and, on cutting it out, a large quantity of a sanious fluid sprang from an opening, proving that a great detachment of horn from the living parts had taken place. I took away with the knife the horny sole and the greater portion of the inside quarter of the crust. The sensible parts presented a gangrenous aspect, and the effluvia that proceeded from them was equal to that issuing from carious bones.

The treatment adopted was yeast cataplasms thrice a-day; and, at each time, the foot was held in warm water until all the poultice detached itself. In the course of a few days the dead parts shewed themselves: they were a portion of the toe and of the sensible sole, between two and three inches square. Other small patches sloughed on the sole, and also on the sensible lamina that were exposed. This was continued during two or three weeks, at the expiration of which period the other surface of the sole presented an appearance of soft horn.

In the excavations left by the separated parts granulations sprouted up and filled them. The cavities became gradually less, and before two months had elapsed, the sole was covered with horn of a firm and good character; and there was also a secretion of crust from the coronary ligament to the extent of an inch downwards, shewing me that my case was now in a favourable train. The measures resorted to subsequent to the sloughing were plain bran poultices twice a-day; and, when these were dispensed with, simple tar and tow, and a small quantity of muriate of antimony to the exuberant granulations, were all that was required.

The diet, in the first instance, consisted of mashes thrice in the day, with cut hay and clover; a few days afterwards, a small quantity of oats was allowed, and which was gradually increased. The reason why I allowed him so liberal a diet was, that the inflammatory tendency was completely put a check to; and all that was needed was the repairing of structure, and which certainly went on with more rapidity than I have before witnessed in any case of a similar kind.

In the latter part of December a shoe was nailed on, and he has gone on well since. In the course of three months more there was sufficient horn to qualify him to proceed to work.

Remarks.—My reason for forwarding this case to you is merely to shew what simple means will effect when they are systematically adopted and abided by. The grand thing in this case was the removing of all the detached horn; and if this was strictly attended to in those of a similar character, so many and so frequent failures would not occur. Many veterinarians, I am persuaded, are not persevering in such cases, and leave it for the farriers to accomplish what they have begun; for my own part, I could never get one of these men to do any thing to my perfect liking, so I have abandoned them nearly altogether, and handle the drawing knife myself; and have found, by the timely removal of all irritants, that I not only save days, but I may say months, in so doing, by preventing quittors, &c.

A CASE OF CONCUSSION OF THE BRAIN.

By the same.

On the 9th of January in this year, a brown cart horse was so much injured by a fall, that it was thought he would never have risen again. He lay in a prostrate position; the breathing hardly discernible, and he remained in this state for about half

an hour. In that interval a man cut the bars of his mouth; a little blood flowed, but at the expiration of the time abovementioned he was so far raised as to enable them to bleed him. The blood was allowed to flow upon the ground, therefore the quantity could not be ascertained; but it was conjectured to be from five to six quarts. By the aid of several men he was got upon his legs, and kept standing for some time; when they succeeded in assisting him to the stable, about a hundred yards from the place where the accident happened.

12 A. M.—He had scarcely reached the stable when I arrived. His pulse was now 40; his head drooped as if he had lost all sensation. They were applying cold water to his head, and the same number of men were still required upon both sides of him. I immediately ordered him into the slings, and hot fomentations to be applied to his head and neck, which gave relief. This was continued for twelve hours.

I may here observe that, by way of experiment, I took a sponge filled with cold water, and wetted the head with it, which caused the former symptoms of coma to return. I instantly abandoned the use of it. It would seem, then, that warm water should be always had recourse to in injuries of the brain; and, in this case, there seemed to be concussion of that organ: what will confirm this opinion is, that the masseter muscle had been contused, as appeared by the swelling of it afterwards.

Barb. aloes ʒvi were now given; and when the warm fomentations lost their power, mustard was applied extensively on the superior part of the neck. This gave pain, and caused him to throw his head about in every direction for the space of an hour. No further excitement could be produced during the same evening by the re-application of the cold water. I now had the mustard washed off, and ointment of cantharides substituted, and bled him to the amount of two quarts, when his pulse became imperceptible.

The following morning the ointment was re-applied, not having acted; the pulse was 60 and full; the other symptoms had not improved. I again bled him till I could perceive no vibration of the maxillary artery, at which period I had obtained six quarts. Linseed oil ℥xii was then administered.

He took through the day a small quantity of bran mash and hay, but still kept lowering his head into the manger, unless excited.

In the evening the pulse was 60, and it had gained strength; I therefore abstracted three quarts of blood. Clysters had been given from the first, at intervals of a few hours. His bowels became relaxed, and continued so for two days. The action of the blister

now commenced, and my patient exhibited favourable symptoms, such as regaining the use of his extremities, and keeping his head erect.

Through the whole of the case one good symptom remained, namely, that of the iris retaining its motion. On the second day of the purging he was released from the slings; he walked about with freedom; pulse still at 60. When the purging ceased, another draught of oil was given, and in the course of a week his pulse returned to its natural state. He received gentle exercise for the space of another week, and then went to work, where he has continued as before the accident. It would, perhaps, appear, in the foregoing case, that the medulla oblongata was the part of the brain that had been injured.

ON RHEUMATISM IN THE HORSE.

By Mr. J. Cooper, *Coleshill.*

The subject which I purpose making a few remarks on is a disease which may very properly be called rheumatism in the horse, although it is a complaint but very slightly treated upon by modern veterinary writers. I have no doubt, in my own mind, that it is a very common affection. I hope, ere long, to see more able veterinarians than myself make some comments on it, through the medium of your journal; not that I conceive we shall arrive at any satisfactory conclusion as to the mode of treatment, at least to afford any permanent benefit; but by our advice we can prevent many horses with this species of lameness being tortured by persons who know nothing of the nature or seat of the disease; it is sufficient for them to point out the shoulder, coffin joint, and other favourite parts, as the seat of the disease to the owner: the firing-irons and cantharides, &c. are immediately resorted to, and the animal is put to all this unnecessary pain without the least chance of success. Every practitioner must be conversant with those cases where a horse is brought to him as decidedly lame and limping as if he had lost the use of his limbs, yet, on examination he finds perfect feet and legs, no thickening of the tendons, nor any external inflammatory action to shew the seat of the complaint. Where must it be? why, the muscles and joints are the parts affected. A farmer, near this place, purchased in a fair a bay horse, to all appearance perfectly sound, and rode him home, a distance of ten miles. The horse was worked the two following days without shewing the least lameness. The third day he became so bad, that with great difficulty he managed to limp out of the

stable. I was sent for to examine him; he was four years old, had very clear legs, and excellent feet. I told the owner treatment would be of no avail; but he was determined to have all four legs blistered: it was done, the horse was turned out to grass for two months, and came up perfectly sound. The weather soon afterwards became very wet and cold; the horse became lame; in fact, the disease seemed to be entirely influenced by the changes of the atmosphere. Thus, in the summer, a horse of this description will be mostly sound, whilst in the winter he will be generally lame. I merely mention this as being a well-marked case, but have seven or eight others which I could relate if necessary.

A CASE OF FRACTURE OF THE ISCHIUM.

By the same.

THE subject of this was an aged mare that had worked as off leader in the London mail, which passes through this town; the distance she ran was only five miles a day. The other morning, about half a mile from the end of the stage, the coachman perceived her (as he said) to falter; he immediately stopped the coach, had her removed, and led to the stable. I was sent for; but although not ten minntes' walk, she fell down and died before my arrival. There was a great quantity of blood escaping through the vulva, and a few small pieces of bone, which convinced me that some part of the pelvis was fractured. On examination, I found the ischium shattered into several pieces: the fracture extended through the foramen obturatorium, so that the two bones were completely severed asunder, the divided ends of which had lacerated the bladder and uterus. There was upwards of a gallon of blood, mingled with urine, in the cavity of the abdomen. This fracture, I think, could not be produced by the muscular exertion of the animal. The coachman, in my opinion, must know more about the matter; but, unfortunately (as is too often the case), the practitioner cannot always trace these occurrences throughout.

ON THE CORDS IN CATTLE.

By the same.

As regards a complaint called the cords in cattle, described by Mr. Corbet, in your last, I have a work in my possession called the *Repertory of Arts and Sciences*, published in 1795, wherein

is a letter from Mr. Harris, a Herefordshire farmer, describing the cause, treatment, and method of preventing this disease, which may, perhaps, not be uninteresting to the readers of THE VETERINARIAN: it is as follows:—"This stricture, or gut-tie, as it is called, is occasioned by an erroneous method of castrating the calves, which the breeders practise throughout Herefordshire. They open the scrotum, take hold of the testicles with their teeth, and tear them out with violence, by which means all the vessels belonging to the part are ruptured; the vasa deferentia, entering by the holes of the transverse and oblique muscles, pass over the ureters in acute angles, at which turning, by their great length and elastic force, the peritoneum is ruptured; the vas deferens is severed from the testicles, and, springing back, forms a kind of bow from the urethra, where they are united over the ureters to the transverse and oblique muscles, and then again unite where they first entered the abdomen. The part of the gut that is tied is the jejunum, at its turning from the left side to the right; there the bow of the gut hangs over the bow of the vas deferens, which, by a sudden motion of the beast, forms a hitch or tie of the string."

Mr. H. says he has cut them for the gut-tie from three months to nine years old. A perpendicular incision, four inches wide, is made under the third lumbar vertebra on the left side; the beast is kept standing, the hand is then introduced to find the part affected. The knife used is in the form of a large fishhook, with an edge on the concave side; it is fixed to a ring; the middle finger crooks round the back of the knife, the end of the thumb on its edge, so that it cannot wound the intestines. I divide the string or strings, and bring out one or both. The operator is cautioned not to wound the ureters. The peritoneum is drawn together by sutures, also the skin; digestives are used to the wound, and some salts are given. Mr. H. recommends ligatures to be applied to the spermatic vessels, or otherwise the cautery to be used as a preventive.

Coleshill, May 9, 1834.

ON TORSION OF THE ARTERIES,

FOR THE PURPOSE OF ARRESTING HÆMORRHAGE IN VETERINARY OPERATIONS.

By Mr. W. YOUATT.

A FEW days after the appearance of Mr. Costello's excellent paper on torsion, in THE VETERINARIAN for April last, a pointer bitch was brought to my infirmary with a large scirrhous tumour

near the anterior teat on the left side. It had been gradually increasing during the last five months: it was becoming more irregular in its form, and on one of its tuberculous prominences was a reddish spot, soft and somewhat tender, indicating that the process of suppuration was about to commence.

I had often, or almost uniformly experienced the power of iodine in dispersing glandular enlargements in the neck of the dog, and also those indurated tumours, of various kinds, which form about the joints of some domesticated animals, particularly of cattle; but frequent disapointment had convinced me that it was, if not inert, yet very uncertain in its effect in causing absorption of tumours about the mammæ of the bitch. Having also been taught that the ultimate success of the excision of these enlargements depended on their removal before suppuration had taken place, and the neighbouring parts had been inoculated by the virus which so plentifully flowed from the ulcer, I determined on an immediate operation; and as the tumour was large and she was in high condition, I thought it a good case for *the first trial of torsion*. She was well physicked, and on the third day was produced before my class, and properly secured. I had not provided myself with the *torsion forceps*, but relied on the hold I should have on the vessel by means of a pair of common artery-forceps; and although I am not prepared quite to justify this apparent carelessness, I am very glad that I used the instrument which I did; for it beautifully established the power of torsion in arresting hæmorrhage.

Two elliptical incisions were made on the face of the tumour, and prolonged anteriorly and posteriorly, about an inch from it. The portion of integument which could be spared was thus enclosed, while the opposed edges of the wound could be neatly and effectually brought together after the operation. The dissection of the integument from the remaining part of the face of the tumour was somewhat slow and difficult, for it was, in a manner, identified with the hardened mass beneath; but the operation proceeded more quickly as I turned off from the skin sides of the tumour, and we very soon had the scirrhus exposed and adhering to the thorax by its base. About two ounces of venous blood had now been lost.

I was convinced that I should find the principal artery by which the excrescence was fed at its anterior extremity, and not far from the spot where suppuration seemed to be preparing; therefore, beginning posteriorly, I very rapidly cut through the cellular texture, elevating the tumour, and turning it back, until I arrived at the inner and anterior point, and there was the only source of supply. The artery was plainly to be seen. In

order to give the experiment a fair chance, I would not enclose it in the forceps, but I cut through it. A jet of blood spirted out; I then seized the vessel as quickly as I could, and began to turn the forceps; but before I could effect more than a turn and a half, I lost my hold on the artery. I was vexed, and paused, waiting for the renewed gush of blood, that I might seize the vessel again; but, to my surprise, *not a drop more blood came* from the arterial trunk—that turn and a half had completely arrested the hæmorrhage. I can safely say, that not two drachms of arterial blood were lost.

The wound was sponged clean: there remained only the slightest possible oozing from two or three points: the flaps were brought together, secured by the ordinary sutures, and the proper bandages applied. The weight of the tumour was now ascertained, and which was twenty-two ounces.

There was no after bleeding, nor any unpleasant occurrence; but the wound, which was nearly six inches in length, was closed in little more than three weeks.

I regard the use of the artery forceps, and the slipping of these inefficient instruments, as a fortunate occurrence, and as setting the question, as to the practicability of this mode of operating, perfectly at rest; but, most assuredly, I will be better provided another time.

I cannot help thinking that, while in the human being torsion bids fair to supersede the ligature, it will, in our practice, drive that relic of the olden and debased state of our profession, the application of the cautery in these cases, fairly out of the field. In docking, there cannot be a doubt that it will be found readily practicable, and quite effectual; and our patients will escape much torture, and tetanus lose many a victim. The principal danger in castration arises from the severity with which the iron is applied, and sometimes necessarily so, or from the inflammation set up by the caustic or the common clams. He will essentially promote the cause of science, and, what should be as dear to all of us, the cause of humanity, who will avail himself of the opportunity which country practice affords of putting the effect of torsion to the test. The colt, the sheep, the calf, will be fair subjects for experiment. The cautery, as it regards the first, and the brutal violence too frequently resorted to in operating on the others, have destroyed thousands of animals. A noble course lies before you, gentlemen. Go on and prosper! and be your reward the thanks of your brethren, and the pleasing consciousness of rescuing your patients from the unnecessary infliction of torture.

EVERY-DAY CASES—EXTRACTS FROM CASE BOOK.

By the same.

"Of these the most important portion of our practice is composed. A hint of the possibility of error with regard to them would be deemed an insult; yet in no cases do we occasionally commit ourselves so egregiously as in these."—*Lectures.*

Dec. 1*st*, 1832. RABIES.—A spaniel, belonging to Madame G., was brought because he had not eaten for two days; but without the slightest suspicion, on the part of the owner, of the real state of the case. The jaw was hanging down, saliva was running plentifully from his mouth, there was a slight degree of strabismus, with spasm about the right eye, and peculiar brightness of it. He staggered a little, and growled occasionally, but was tolerably manageable.

2*d*.—Lies curled up in his bed; when taken out he staggered more. The water which had been placed before him was covered with, or rather was, one mass of slime. He is getting more ill-tempered. A grating noise is heard in the throat.

3*d*.—He lies in his bed as yesterday. On going to him, and taking hold of his chain, he attempted to bite it. There is paralysis of the orbicularis muscle of the right eye: he is very weak, and can scarcely stand. He continued to get weaker and weaker, and died in the night of the 3d.

Fauces much inflamed, extending over the membrane covering the dorsum of the epiglottis. Stomach very much inflamed, and throughout. Much dark-coloured slimy fluid in the stomach.

Dec. 1*st*, 1832. ENCYSTED TUMOUR.—A bay horse, belonging to Mr. L. A tumour, rapidly increasing, was forming about two inches posteriorly and superiorly to the corner of the mouth. There was no appearance of it when the horse went into the country two months ago.

It was loose under the integument, but seemed to adhere closely to the buccal membrane. I made one longitudinal incision, and readily dissected it, until I arrived at the buccal membrane, with which it seemed to be identified. A small hole was necessarily cut into the mouth. One large and one small vessel was secured. Five stitches were employed. The tumour was the size of a hen's egg compressed: the parietes thick, indurated, and almost cartilaginous. A cyst within contained an ounce of pus, of the consistence of cream. The lining membrane was curiously thickened.

5*th.*—Every stitch has sloughed out, and the whole is one gaping wound; there is not the slightest adhesion between the parietes of the cyst, but the food gets into it from the mouth, and escapes through the cheek.

I scarified the inside of the cyst and the edges of the incision; brought them together again, and secured them by four ligatures. Took away all solid food, and ordered gruel alone, which he refused.

7*th.*—He still will not take his gruel; give him oats and bran, but no hay: the new ligatures beginning to give way.

8*th.*—His legs swell; the stitches are all out, except for about half an inch at the upper part of the incision; the cyst a little, and but a little, closed. Foment to abate the local inflammation; give bal. purg.

12*th.*—Cyst nearly filled up, and the wound seems considerably contracting. The opening into the mouth readily felt; and about an inch and a half in length. Apply the lunar caustic freely about the internal edges of the wound. Continue the corn and bran as before.

15*th.*—The cyst nearly obliterated, and the wound gradually filling up, both above and below. Caustic again employed.

20*th.*—Dismissed, and two months afterwards there was scarcely the vestige of a scar.

Dec. 2d, 1832. CATARRH.—A roan horse, belonging to Messrs. ——, brewers, has been coughing, somewhat sorely, for nearly a fortnight. Has been bled twice, and had digitalis, nitre, and emetic tartar, occasionally. Coughs quite as badly; pulse 52; somewhat off his feed; and mouth a little hot.

Cannot be spared from work; continue the same balls daily, and bran mash.

5*th.*—Rather worse; off his feed; very dull; mouth hot and dry. Pulse 58; very uneasy, lying down; turning his head round to his flank; *they will not spare him from work.* Give fever ball.

6*th.*—Much the same; bleed to twelve pounds. Gave fever ball, and ordered him a bran mash. Kept him at home, after much altercation.

7*th.*—Rather better. Gave three fever balls in the course of the day.

8*th.*—Better: pulse 32; repeat the ball night and morning.

9*th.*—Much better. Sent to work, yet unwillingly; but there was no help for it.

10*th.*—Not feeding well; the pulse, however, and the membrane of the nose in a more satisfactory state. Give a good mash and a cordial diuretic ball every night.

12*th.*—Is certainly thinner, and tucked up, but he feeds better; and they say that he works willingly. They were entreated not to put upon him too much; and the mash and the ball were continued. He got quite well.

Dec. 3*d*, 1833. INFLAMMATION OF MUCOUS MEMBRANE OF THE BOWELS.—A cat, belonging to Mr. B—, has had mange very badly for a long while. Removed temporarily by the common sulphur ointment, to which an eighth part of blue ointment had been added, and half a grain each, daily, of antimonial powder and calomel.

Mange returning. Ointment and powders sent for.

The powders had been given only a few days, when violent purging came on, with dreadful pains; the animal screaming violently: mixtr. e. ol. ric. cum syr. papav. alb. given, but rejected; opium and chalk were then tried, which were also rejected.

The owner came again to me for advice; I recommended that the mixture should be followed up, until it staid on the stomach.

6*th.*—The mixture has been given, and the purging is staid; but the animal will not eat. The occasional screams are continued, but now only when attempting to void urine. Pulv. e. pulv. antimonialis ʒij, pulv. opii gr. $\frac{1}{8}$, morning and night. In about five days the animal was quite well.

Dec. 4*th*, 1832. RHEUMATISM-HÆMORRHOIDS.—Cries out when touched; rubs its anus along the carpet; and its belly is very tense.

Warm bath, and mist. e ol. ricini, syr. rhamni, et papav. alb.

The bowels were freely operated on in the course of the night, and the next day the dog was well.

Dec. 7*th*, 1832. REDWATER.—A stranger came to me about his cow; said she had redwater very badly; heaved; was off her feed; her milk diminishing; and water very red. He had bled her, and now wanted a drink—a drying drink, as he called it, that was to stop the discharge at once. Endeavoured to persuade him to have a dose of physic (magnes. sulph.) but could with difficulty get him to take it. I afterwards ascertained that he did not give it, but went to a chemist, who gave him this *drying drink*, and in less than thirty-six hours she was dead.

Dec. 9*th*, 1832. SANDCRACK.—A roan horse, belonging to Messrs. ——, brewers, four months ago, sprung a sandcrack in front of the near foot before. It penetrated the quick, and there was great lameness. It extended from the coronet two thirds of the space down the foot. Pared it well out, liberated the incarcerated laminæ; applied the back of the hot iron above, and the sharp edge below. Introduced a bit of lint at the bottom of

the sulcus, and covered the hoof with pitch; then bound tape all round it, and covered the whole with another coat of pitch. Took the horse away from his work.

In about three weeks the bandage loosened, and was removed. The new horn was evidently beginning to grown down from the coronet, and there was very little lameness. Bound the foot as before. They were short of horses, and would work this one; and on the first day the lameness returned, and the crack once more sprung up to the coronet. I again applied the cautery, and remonstrated against their working him; but a week afterwards they used him in the dray, and again he was lame.

He was now given up to me; I once more fired him, and bound up the foot; and in about a month the lameness was gone, and the horn nicely growing down. They were permitted to use him, or rather they would use him, to draw a light sledge now and then, and afterwards they put him into the dray, and then into the mill. He stood it well; the horn finally grew down perfectly sound; but the lower part of the foot is exceedingly oblique in front, and flat beneath. We are frequently obliged to take away full half an inch of horn round the toe.

Dec. 9th, 1832. GREASE.—Two old horses, one of them blind, belonging to the same persons. They have had grease many a month, the legs now and then swelling tremendously, and the discharge stinking abominably. By occasional poultices, lotions of the chloride of lime, and sometimes alum, and sometimes blue vitriol, we can keep it at bay, but we cannot cure it. The two first are the most efficacious; the alum wash, after the fœtor has been subdued by the chloride, appears to be doing wonders for a few days; but it is all delusive. They have a tonic diuretic ball twice in the week.

Dec. 9th, 1832. MANGE.—An Italian greyhound, twelve months old, belonging to U. B —, Esq., had considerable redness and pustular eruption on the belly, flank, and inside of the thighs. The skin at those parts is very hot, and the itching seems to be intolerable. Apply equal parts of the sulphur and emollient ointment; give three grains of calomel every fifth day, and an alterative ball (Ethiop's mineral, sulphur, and nitre) on each alternate day.

15*th*.—The eruption has died away about the belly and flanks, but on the thigh, and extending down to the feet, it is more virulent than ever. The dog has lost flesh at a strange rate. Continue ointment; give a tonic ball, with three grains of antimonial powder, daily.

20*th*.—The animal continued to droop, and died to-day; but the eruption had been apparently yielding. He died worn down

by the degree of irritation; and perhaps the calomel and alterative medicine had been pushed a little too far, and the tonic balls commenced too late.

Dec. 10*th*, 1832. PARAPHYMOSIS.—Spaniel, Mr. W—. The glans penis œdematous, treble its natural size, protruded from the prepuce, and cannot be returned. Scarified it with a lancet on both sides; a watery fluid, mixed with blood, escaped; fomented well with warm water, then ran the eye-end of a curved needle, dipped in sweet oil, all round between the prepuce and the glans; easily returned the glans, and ordered cold water to be applied three or four times in the course of the day.

11*th*.—Well: nothing to be seen but the slight incisions made yesterday.

Dec. 10*th*, 1832. PARTURITION.—Terrier, Lady de la ——. A fortnight ago she whelped, and was apparently doing well until yesterday, when she began to pant violently. She now lay half unconscious; her breathing could be heard in the next room, and a person unaccustomed to dogs would imagine that she was dying. Ordered her to be kept in a warm bath (temp. 96 Farh.) a quarter of an hour, and to be fairly but not too thoroughly dried; she was then wrapped in a blanket. She was soon relieved, and a strong physic ball was given.

11*th*.—She is quiet, feeds tolerably, and takes care of her puppies; one of them was ordered to be destroyed immediately. Another was taken away two days afterwards. She did well.

Dec. 10*th*, 1832. LAMPAS.—Bay filly, Mr. R. The bars of the palate were enlarged, but to no great extent. It was, however, wished that they should be burned or cut; and I lanced them rather deeply. The groom was instructed how and when to stop the bleeding with a sponge and cold water; but he could not, or would not do it, and she bled on until she began to blow and to stagger. He then came in great haste. Two of my pupils returned with him, and immediately arrested the hæmorrhage by means of a compress and alum water.

11*th*.—The enlargement of the bars has disappeared. She is feeding; and no harm is done.

A CASE OF HYPERTROPHY OF THE HEART.

By Mr. THOMSON, *V.S., Beith, N. B.*

IN the month of March, 1833, a horse, belonging to Mr. Orr, Carse of Lochwinnoch, was brought to me for examination. I found him lame, apparently in the shoulder; he groaned when backed, and shewed unwillingness to turn round, or even to

move. The pulse was irregular, and considerably above the standard; but as he had come a considerable way from the country, and up hill, and was completely drenched with rain, I could not form a decisive opinion of his case. I was inclined to think that it was a case of acute rheumatism or founder; and that the peculiarity of the pulse might arise from exertion and pain in travelling.

He was bled, and a dose of physic given, with directions to bandage his legs, and keep him dry and warm; and the people were ordered to let me know how he was next morning.

Notice was given me on the following day that the animal was much worse, and my immediate attendance was necessary. On my arrival I found him in the most pitiable condition. He was standing with his fore legs extended wide—the nostrils dilated—the breathing quick and laborious—his eyes sunk in their orbits—the pupils dilated—and a whitish humour discharging from the eyelids. He was turning round his nose almost to the elbows, and sighing now and then; his countenance shewing approaching dissolution. The pulse had a most peculiar irregular motion, and the undulation in the jugular veins was extending up to the root of the ears. I saw that death was fast approaching, and requested the owner to let me know when he died, that I might inspect his chest. He expired a few hours afterwards.

I proceeded to open the chest by sawing off a portion of the ribs and sternum, in order to have a full view of its contents. There was considerable inflammation of the lungs and the pleura. The pericardium was much inflamed and distended to a large size; its cavity contained a fluid of a reddish colour, and of considerable quantity. The heart was of an enormous size, and greatly inflamed. Both the auricles and ventricles were full of coagulated blood. Their parietes were relaxed, and those and the greater part of the cordæ tendineæ had given way. The valves did not approximate to perform their function; the foramen ovale was also dilated. It was, upon the whole, a large disorganized mass, weighing thirty-four imperial pounds.

This animal was in the owner's possession for some time; had never been at quick or very laborious work; nor, so far as he knew, over-exercised. He worked constantly on the farm.

THE VETERINARIAN, JUNE 1, 1834.

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

MR. FRIEND'S NEW HORSESHOE.

THIS shoe (of which an illustrated description was given by Mr. Friend in the last number of THE VETERINARIAN) must be so fresh in our readers' minds, that in the account we are about to offer of its apparent utility there cannot exist the slightest necessity to recur either to its construction or mode of application.

Its professed object is "frog pressure:" a subject on which we shall avail ourselves of the present opportunity to offer a few cursory remarks, prior to giving our opinion on the shoe itself.

PRESSURE TO THE FROG is the application of a doctrine that originated with the celebrated French farrier, La Fosse, whose notion was, that such was requisite, not only to preserve the foot in health, but to save the flexor tendon, above it, from undue stretch and consequent strain or rupture. Since La Fosse's time, although the principle on which he acted has been rejected, the practice has met with a zealous advocate and supporter in our present Professor at the College. No person can have read the Professor's work on the foot, or ever listened to his lectures on the same, without being impressed with the absolute and indispensable necessity of pressure to the frog, as well for the healthy condition of the organ itself, as for the due execution of that important part it has to perform in the economy of the foot. La Fosse, for the purpose, presented us with a very useful and effectual form of shoe—the half-moon shoe or tip; to which our Professor has added some three or four other novelties and contrivances, some of which he has estimated so highly as to make them the subjects of patents. Professed admirer and espouser, as Mr. Coleman has ever declared himself to be, of pressure to the frog, it becomes no matter of surprise that the doctrine should have been so extensively propagated throughout the profession, and should have found so many adherents as we find there are, especially among its junior branches. We believe,

however, we may now add, with some degree of confidence, that it is a doctrine which has lost much of its asserted merits among those veterinarians whose diploma are of older date, and on whose foreheads time has engraved some few wrinkles of experience.

With this preface we feel ourselves bound in conscience to inform our worthy and excellent correspondent, Mr. Friend, that, for our own part, we are by no means the thick-and-thin advocates for frog-pressure which the Professor and his more immediate followers are; and, consequently, however much we might admire any invention for carrying such an object into effect, we probably should not recommend its adoption either so frequently or for so long a time as the Professor, or even he himself would. For all this, however, we tell Mr. Friend candidly, that we find much ingenuity, combined with simplicity, in his contrivance; and that, for the purpose for which he intends it, we think he has succeeded better than any one before him has done. And the reason why we think so is this:—that, while his shoe affords every cover and protection the frog can require, the frog-bar being a moveable one—"independent," to use his own expression, capable of ascent and descent,—it admits of "each part of the foot having its proper action," or, in other words, "of nature being more closely imitated." The Professor's patent artificial frogs, those he first invented and introduced into the army, were, as well as the one before us, capable of springing up and down—of ascending and descending; but then they did not afford the same complete cover and protection to the frog; and, moreover, were incapable of being used for any length of time, in consequence of their harbouring dirt and gravel, and so becoming, in the end, a source of evil instead of benefit.

In regard to the use of *leather*, in conjunction with iron, as a covering or defence for the foot; the practice, or, at least, its revival, is but of very recent date: at the same time it is one that appears to be fast gaining ground amongst us. We appear to employ leather with two views—as a protection to the more tender parts of the foot, and to counteract or ward off concussion; and with either one or both views it certainly, on many

occasions, presents itself as a very acceptable and serviceable auxiliary.

In the common mode of applying leather to the foot (which is either to shape it out to the sole, or else to cover both frog and sole) there is an evil attending its application, which Mr. Friend's method is well calculated to remedy. I allude to the want of due or salutary pressure to the frog. It being evident that, in the manner in which the ground-surface of the foot is commonly covered with the leather, the burthen from above must be borne exclusively by the wall—at least, so long as the animal is treading upon a *plane* surface: whereas, with Mr. Friend's shoe, the weight is sustained in part by the *frog*; a circumstance that cannot fail to render his shoe of peculiar value to us in cases of *sunk soles*, when we are desirous of relieving the laminæ as much as possible. This we take the liberty of recommending to the notice of our *friend* as an additional advantage his shoe possesses, and one of which he has not himself made any mention.

The only drawback on its utility that presents itself to us—speaking, as we confessedly are doing, before trial of it—is one affecting its application. From the circumstance of the artificial or leathern frog being more prominent upon the inner or upper surface than the surrounding parts, in cases where the frog itself was prominent likewise, there would necessarily arise some difficulty in accommodating these surfaces: unless one were cut down or removed, the shoe could not possibly be brought to come into close contact with the wall. From Mr. Friend's exposition, however, of the applicability of his shoe, we conceive that he intends the "piles of leather" placed opposite the frog to be removeable at pleasure; an arrangement that would, of course, neutralize our seeming, and perhaps unfounded, objections.

We conclude this short notice of our professional *friend's* shoe, with a conviction that it will be found a very serviceable innovation in cases generally, wherein it becomes advisable to seek the aid of leather.

P.

Veterinary Affairs.

EDINBURGH VETERINARY SCHOOL.

THE examination of the students attending the Veterinary School taught by Mr. Dick, under the patronage of the Highland Society of Scotland, took place on Thursday and Friday last, in Mr. Dick's new class-rooms, Clyde Street, in presence of several directors and members of the Highland Society, and of the committee especially charged with the duty of watching over the interests and progress of the school. Sixty two students attended the lectures during the session, a number greater than on any previous occasion; and of those the sixteen following, who had finished the prescribed course of study, were found qualified, and obtained certificates accordingly :—

JOHN BISSET, Rait, Perthshire
WILLIAM YOUNG, Noblehouse, Peebles-shire
JAMES KAY, Blairgowrie, Perthshire
WILLIAM LEITH, Alford, Aberdeenshire
GEORGE CHAMBERS, Tarvis, Aberdeenshire
GEORGE PURVIS, Stirling
ANTHONY SMITH, Inverary, Aberdeenshire
JAMES CRIGHTON, Cupar, Fifeshire
ARCHIBALD DUNCAN, Leven, Fifeshire
JAMES TINDALL, Golspie, Sutherland
JAMES SANDEMAN, Corteskie, Forfarshire
GEORGE CLELAND, Rosewell, Mid Lothian
GEORGE CROSS, Ury, Kincardineshire
JOHN SINCLAIR, Gartincaber, Perthshire
ALEXANDER SMEATON, Crichton, Mid Lothian
JOHN M'KIRDY, Kingarth, Bute.

The examinations were conducted by Sir George Ballingall, M.D., Mr. Gillespie, Mr. Newbigging, Dr. Borthwick, Mr. Liston, Dr. Robertson, Professor Lizars, Mr. Hallen, veterinary surgeon of the Enniskillen Dragoons, and Mr. Gray, veterinary surgeon, Edinburgh. It is gratifying to state, that these gentlemen expressed themselves highly pleased with the correct manner in which the students went through their examinations, and which evinced a most satisfactory degree of diligence on their part, and reflected high credit on the unwearied assiduity of their instructor, Mr. Dick. The privilege so liberally afforded by several of the most eminent medical lecturers in Edinburgh, of free attendance on their instructions, to the students in Mr. Dick's class, was fully illustrated in the course of the examinations.

Mr. BURN MURDOCH, the convener of the committee, then addressed the students, and intimated that prizes had been

awarded to three of their number, viz.—George Cross, William Leith, and John Sinclair, who, in the opinion of the medical gentlemen, had most distinguished themselves in their examinations; and he took the opportunity of urging upon all who had then obtained diplomas, the obligation incumbent on them, by strict attention to their general and professional conduct, to uphold their own character, and the reputation of the school with which they were now so closely connected. The Convener then requested the medical gentlemen to accept of the best thanks of all interested in the establishment, for the highly important assistance received from them; and which can only be fully appreciated by considering that the qualifications of those on whom certificates are conferred, are thus guaranteed under the authority of their names.

Lord GREENOCK, on behalf of the directors of the Highland Society, in conclusion, expressed to Mr. Dick the great pleasure they had received in attending the examinations, and the satisfaction which the lecturer's conduct continued to give to the Society in every respect.

TRADES' UNIONS.

IT is with much reluctance that we enter on any subject that can be, in the slightest degree, considered to have a political bearing; but we have received so many letters, complaining of annoyance in various ways by the trades' unions that so unhappily pervade every part of the country, and inquiring how we go on in the metropolis, and what we would advise to be done, that we feel ourselves compelled to give some reply.

There can be no doubt that our journeymen have an abstract right to combine together for the obtainment of a fair rate of wages, and to establish whatever regulations they please among themselves; but it is another question how far such combinations are called for, or expedient, or to what injurious consequences they almost necessarily lead. That there may be some hard task-masters is probable enough; but the dependence of the master and the journeyman upon each other (the master having work that must be done, and the journeyman being compelled to get work, in order that he may live), will almost invariably produce a fair rate of wages; and he who will not act rightly by his men will soon be punished by having no men about him. A system of injustice on the one side or the other must soon die away, without the necessity of any unions to destroy it.

But, supposing that the journeymen were generally oppressed, would combinations like the trades' unions remedy the evil? They produce angry passions on both sides; obstinacy on both; revengeful feelings, and occasional outrage. They cause temporary inconvenience to the master; they entail distress and starvation on the workman. The former can subsist for a while on his capital and his credit; the latter has no resource but a fund not too great for the ordinary claims upon it, and the demands upon which are now fearfully increased, and the sources of supply cut off. The parties do not, cannot meet on equal terms. The employer must conquer if he has but a sufficient resolution, and the employed must succumb after more suffering, perhaps, than the humane man likes to contemplate, and probably being compelled to work on less wages, or, perhaps, not getting work at all; while he has deprived himself of that provision to which he had been previously accustomed to look forward as a refuge when sickness or old age overtook him.

These general observations, however, hardly reach the questions which some of our correspondents have put to us. We are asked, what is the state of the masters in our profession in the metropolis and its environs, and what are they doing?

Veterinary surgeons generally have not experienced any very great inconvenience. There have been partial strikes with regard to the making of shoes, the number of apprentices, and the employment of those not belonging to the club; but fresh hands have immediately filled the chasms. There are more efficient men than we can employ, and who are unconnected (*as they say*) with the clubs and the unions, and who work for lower wages; while the funds of the unionists, which were supposed to be inexhaustible, are gone, perfectly gone. We are, therefore, *now* at perfect ease with regard to the striking of our men, for they have not a sixpence left in their treasury; and in three days we should have from the country double as many men as our business requires. But we are still subject to annoyances, not a little teazing; calumnies of every sort whispered among the menials of our employers, as to the manner in which our business is conducted; opposition of every sort; efforts diabolical, persevering, to seduce our friends to the forges of the unionists, or of those who are friendly to the union, or who have made no stand against the union. Now and then we are insulted in the streets by those whom gratitude ought to have bound to us; and our workmen are tampered with, annoyed, threatened—in some rare cases maltreated.

What are we doing? why, speaking of the most influential part of us, NOTHING! What were these persons doing when the

funds of the farriers were flourishing, and partial strikes were almost daily taking place, and a general one was threatened? why, NOTHING!! But there were a certain number of all grades among us who united together; and their united strength and united influence put down at once the meditated oppression of the journeymen; and the farriers, almost the only trade of which this could be said, joined the union as paupers. We transcribe two or three of the resolutions of these masters who so nobly stemmed the torrent. They do them credit.

"18. That no journeyman that has struck, or that shall hereafter strike, against any member, with reference to the late attempted encroachments of the men, shall be employed by any other member of this society, until he has made proper submission in the opinion of his late master; and this on pain of the member's expulsion.

"19. That in order that refractory journeymen may be known to the society, each member shall regularly send to the secretary the names of those men who strike against him, or whom he is compelled to discharge for other bad conduct; and the secretary shall keep an account of the same, and report it to the society on the following meeting night.

"20. That the workmen belonging to the club or union shall not be dismissed while they do not resist wages they have been accustomed to receive, or while they will work with men not belonging to the club or union; the object of the society being merely to protect the interests of the masters, without prejudice to any set of men: but in the selecting of new men decided preference shall be given to those who do not belong to such club or union."

This quotation contains a sufficient answer to the two questions—what have we done, and what do we recommend to be done? The relative situation of master and mechanic is now become a subject of paramount importance. It involves, and it has almost effected, a separation; a gulph between these two classes of society, that are so closely united in interest, and should be in good feeling. It is the first step towards a dissolution of all the ties that should connect society together. He must have observed the signs of the times with a careless eye who has not perceived how diligently and widely—let it not be fatally—politics have been mixed up with the question between master and mechanic. The speeches of the leaders of the unions have been characterized by a suspicious violence; and every page of some of the publications that have been so industriously disseminated, teems with the rankest sedition; while secret obligations continue to be taken, at which the blood runs cold. If

masters are supine, it will be found to be the commencement of a fearful struggle—a second war of the Helots—a destructive revolution.

What then is to be done? Nothing violent or unkind; nothing that can bear the slightest construction of injustice or oppression; yet a firm determination to resist every unjust demand, every demand accompanied by intimidation or annoyance. A negative support of our brethren, by refusing to employ those who have forsaken their former masters; a positive support, by our influence and assistance when circumstances may require it, and that confined not to our own profession, but extended to all whose interests have been attacked or threatened. The word union expresses the character and strength of the enemy: it should represent the nature of our defence. Although deluded, strangely and fatally in many things, these misguided men are perfectly aware of the weakness of the body of the employed against that of the employers, and therefore they are ostensibly putting forward the workmen of one trade, but secretly backed by the contributions of the whole union, against, as they hope, the unassisted masters of that trade. These masters, however, are united, and ere these observations are read by our subscribers, the journeymen, reduced to perfect destitution, will, probably, have solicited again the employment they abandoned. Should it be otherwise, it is painful to contemplate the scenes that must ensue. Firmness individually, and increasing union, defensive and not aggressive, will assuredly stem the torrent. Apathy and disunion are disgraceful, and may be fatal.

Y.

ON COLLEGE EDUCATION.

By STUDENS.

Messieurs Editors,

IT is the pride of an Englishman to hear of the superiority of his own countrymen in many of the arts and sciences, when compared with foreigners; but if he inquire respecting the scientific education of an English and French veterinary pupil—Oh! what a falling off is there! The present system of English veterinary education is, in my opinion, disgraceful to the country, as well as the profession as a body. Persons are admitted as pupils who can scarcely write their own names; added to which, the law brought in force some few years since by the governors of the Royal Veterinary College, which says, that a student shall not present himself for examination *until he has stu-*

died twelve months at the College—I am sorry to say, Messrs. Editors, this law has been and is evaded yearly, and more so this year than heretofore. Young men enter at the College about October or November; stop three or four months; get a smattering of knowledge, just enough to make them conceited; mangle two or three subjects; and then leave until their year has nearly expired, when they return; study hard for a few weeks; get a little parrot knowledge of chemistry and the favourite theories of the professors; bother all their friends; are daily ground either by their fellow-students, or a person in the College whom they pay for that purpose; go up, and generally pass, telling Sir Astley Cooper a lie, who invariably asks, first of all, "How long have you studied at the College, sir?" and to which they unhesitatingly reply, "Twelve months, sir."

By this means, persons get their diplomas who are totally unworthy of them, and who only bring the profession into disrepute; and so long as these proceedings are allowed, the profession will never gain that station in the eye of the public, of which it is deserving when properly pursued. Twelve months, in truth, well applied, is full short time to gain the knowledge absolutely necessary to make a scientific practitioner. It appears, under the present regulations, of little consequence, *so that the fees are paid*, whether the whole or half the lectures of the Professor are attended. Believe me, Messrs. Editors, I am very sorry to give publicity to such proceedings as these, when I very much respect the heads of the Institution, and have received kindnesses from them which I shall never forget; but when I see evils increasing daily, of the greatest injury to the institution, the public, and the practitioner who has really studied for his diploma, I think it high time that the governors and examining committee should be made acquainted with the circumstances; and I sincerely hope that this may meet their eye, for I feel assured these things have only to be known to be rectified.

With every good wish for the continued success of your excellent and invaluable Periodical,

I remain, &c.

We interfere with the previous arragement of the contents of the present Number, in order to insert this letter. If the fact be as our correspondent states, it is a shameful breach of faith with the examiners, the profession, and the public. If he has maliciously stated that which is untrue, the contradiction is easy.—EDIT.

Extracts.

Cases of Wounds of the Joints.

By M. Le Coq, *V.S., of Lyons.*

A filly, eighteen months old, found her way, on the 26th of December, 1826, into a stable, where was a machine for cutting chaff, armed with its blade. The servant, seeing her go out lame, examined her, and found a deep cut on the anterior face of the right hind fetlock.

Being called to her immediately, I found her lame; when she walked, she dragged the injured leg after her. The cut extended from one side to the other of the fetlock, close to the lateral ligaments of the joint. When she flexed the leg, the two lips of the wound were separated more than an inch and a half; the extensor tendon was cut quite through, and the blade of the machine had penetrated into the cannon bone two lines in depth. The wound bled very little, but some synovia was mingled with the blood, which I supposed proceeded from the sheath of the divided tendon. Hoping to diminish the size of the wound, and, by bringing the lips of it together, to cause it to heal by the first intention, at least towards its extremities, I enveloped half of the cannon bone, the fetlock, and the pastern, with many folds of linen covered with the white of an egg, in order to make them adhere together. I applied on each side a splint somewhat long, and on the anterior face of the joint a third splint of iron, curved so as to adapt itself to the part, and keep it in a state of extension. I secured the whole by some turns of linen bandage tightly drawn, to which were attached two straps with buckles, the one going round the pastern, and the other the lower head of the cannon: the animal was put into a stable by herself, and was restricted to straw and white water.

The bandage was not removed until the 29th: the wound was a little cicatrized, but its lips were much swelled, and a clot of synovia was found between them. The lameness was greater than on the 26th. The wound was covered by a pledget dipped in water slightly alcoholized, and kept in its situation by a bandage rather tight.

30*th*.—The lameness was diminished, the swelling of the lips of the wound was increased, and the clot of synovia was enlarged. This last circumstance assured me of the state of the joint; which, on examination, I found opened, and into which I passed a very small and flexible probe. The pledget smelled very strongly.

The same dressing was continued daily, until the 9th of January.

At this time the animal was scarcely lame at all; the lips of the wound were considerably larger, and formed a red surface, at the centre of which was a fistulous opening, and through which the synovia could be seen escaping, when the extremity was placed on the ground. The clot was every day as large as an almond. Digestive ointment was applied to the fistula by means of a thin layer of tow.

14*th*.—Neither the flow of synovia nor the surface of the wound had diminished. I applied over it a little burnt alum in powder, and I placed on the fistula a small pledget covered by several others gradually increasing in size: the whole was kept in its place by a bandage, which I ordered to be drawn tighter than I was accustomed to do.

20*th*.—The flow of synovia and the surface of the wound were much lessened. I ceased to use the alum, but continued to apply the pledgets, always tightening the bandage.

26*th*.—The synovia had almost ceased to escape; the wound was smaller, and looked healthy; and the lameness was scarcely perceptible.

28*th*.—The wound continued to diminish; the flow of synovia had ceased, although the fistulous opening was still perceptible.

31*st*.—The wound was quite healed; but some of the wrappings were continued, to defend the part from accidental blows, and from cold.

Two months afterward, the fetlock presented nothing more than a very small portion of callous substance, covered, in part, by hair. The action of the injured fetlock is the same as that of the other, except that the foot is carried a little more inward; but this must be pointed out in order to be perceived.

CASE II.

July 25*th*, 1827.—An entire horse, aged, had had for two years a tumour on the coronet of the inner quarter of the left hind foot, resembling, in form and size, the half of an egg, placed horizontally on the part. This tumour was exceedingly tender, and presented an evident fluctuation. Behind it was found a little fleshy enlargement, like the imperfect cicatrix of a wound produced by a sharp instrument. The animal had been very lame for about eight days, at which time the tumour had begun to appear. Apply an emollient poultice.

26*th*.—The tumour is larger, and the fluctuation more apparent. I punctured it in order to give issue, as I supposed, to the

pus which it contained; but, to my great astonishment, no fluid followed the incision. On introducing my finger into the opening, I drew out a clot as large as a walnut, of a yellow citron colour, and which I immediately recognized as coagulated synovia. Dress with digestive ointment.

From *July* the 27*th* to *August* the 3*d*.—He has been dressed daily with the simple digestive; at every dressing a clot of synovia has been found; the bandages were wet with the discharge. A probe, directed towards the articulation of the pastern with the coffin bone, touched an osseous surface.

From *August* the 3*d* to the 13*th*.—The wound was dressed in the same manner; the lips were engorged, and much fungus sprung from them, which was kept down by the calcined alum.

On the 11*th*, I covered with alum a small piece of lint, rolled into a hard pledget, which I introduced into the fistula, in order to dilate it.

On the following day, on inserting a probe to the bottom of the wound, I felt that a portion of the bone was movable; but I was unable to extract it.

13*th*.—I opened the fistula from below upwards, and after introducing a pair of small forceps several times, I drew out a flattened splinter, rough at its edges, and presenting, at one of its extremities, a glistening portion, slightly convex, which I regarded as a fragment of the inferior articular surface of the pastern bone. I introduced into the fistula a pledget covered with digestive ointment, and dressed the wound with the same.

23*d*.—The wound producing no more splinters, and the discharge of synovia being the same, I employed the same compression that I had done in the former case; contenting myself, as to any thing else, with repressing fungous excrescence by means of the caustic.

Sep. 10*th*.—The synovial discharge, now reduced to one quarter of what it was, ceased altogether at the end of this month. The little wound which we found behind the tumour did not heal until that into the joint was closed. I regarded it as the result of a blow with a fork, and which had reached the joint. This wound being diminished, and, as it were, closed at the bottom by the first intention, could not give passage to the synovia, which then accumulated in front of it.

I saw the animal six months afterwards; the principal wound had been replaced by a horny excrescence, situated on a little rising scarcely perceptible. Although the lateral cartilage of the foot had been denuded at its superior border, and had even been reached by the caustic, it had not become carious; the lameness had ceased ten days after the opening of the tumour,

and had not re-appeared either during the formation or the extraction of the splinter.

CASE III.

On the 4th of August, 1827, I saw an entire horse, four years old. He could scarcely bear the least weight on the left hind leg; the pastern and the coronet were swelled. In front of the pastern, at the articulation of the pastern bone with the coffin bone, there was a mortified surface, as large as a five-franc piece, in the middle of which was a fistulous opening. A probe penetrated to the bone, and there flowed from the fistula an oily liquid, which I recognized as synovia. The animal, according to the proprietor, while they were harnessing him, entangled his foot in the belly-band, and struggled a long while before he could release himself. Two cracks at the back part of the pastern were the consequence of this accident. The horse had been treated fifteen days by a mere pretender, who had applied different ointments, and probably caustics, if we may judge by the wound on the anterior part of the pastern. I cleaned the diseased parts, after a great deal of trouble, by soaking them with oil, and then washing them with warm soap and water: the hair was cut close, the mortified surface which surrounded the fistula was detached, although with some difficulty; and a wound of a tolerably healthy appearance remained. I dressed the wound and the cracks by means of pledgets dipped in water slightly alcoholized, and kept in their situation by a bandage a little tightened.

16*th*.—The animal is not so lame; the bandage and the pledgets are soaked by the discharge, and the surface of the wound presents clots of synovia. I replaced the alcoholized water by an emollient liniment; and I produced compression upon the fistula by means of pledgets, which I kept there by a bandage tighter than at the first dressing.

19*th*.—The wound has diminished; the synovial discharge has ceased, although we can yet perceive the edges of the fistula. Dress with the liniment.

23*d*.—The anterior wound required very little more attention. But at this time several little tumours or boils began to appear along the course of the tendon, which caused a good deal of suffering to the animal, and retarded the cure more than a month.

CASE IV.

A Hungarian horse, three years old, fell on the promenade on the 25th of August, 1828. The soldier who rode him, perceiving that he was wounded in the fetlock, led him to the stable, and

requested my assistance. The wound, nearly as round as a five-franc piece, and about the same size, was situated on the upper part, and a little on the outside of the left fetlock before. Some half-detached portions of skin, separated by the blood, were seen near the extensor tendon; slight extravasation existed behind them, from which a reddish liquid flowed; the whole of the denuded surface was covered with dirt and gravel, and which I could only imperfectly remove, after repeated washings with warm water. The lameness was not great. I removed these portions of skin with the scissors, and covered the wound with pledgets dipped in alcoholized water.

26*th*.—The bandage was soaked with the discharge; the wound was not yet thoroughly clean; the fluid of the interior excavation began to take on the character of synovia; the leg was swelled, and the lameness increased. The same dressing was applied as yesterday.

27*th*.—The wound was of a vivid red colour; a discharge, evidently synovial, proceeded from the sheath of the extensor tendon; the lameness was not increased, although the leg was hotter and more swelled. Dress with simple digestive ointment.

From the 27*th of August to the* 11*th of Sep*.—The wound had been dressed with the digestive; a slight suppuration had been produced; the surface was a little irregular, the granulations were exuberant, and we found, at every dressing, a clot of synovia which filled the inferior excavation of the wound.

Sep. 11*th*.—The enlargement remained, but the heat and pain were removed. I applied over the whole extent of the wound a light pledget, powdered with calcined alum; and I placed over the excavation some graduated pledgets, which might compress the fistula.

14*th*.—The bandages were no longer moistened by the synovia; a very small clot could be seen at the bottom of the excavation; the rest of the wound was becoming on a level with the skin. The dressing was the same, with the exception of the caustic.

17*th*.—The excavation was almost on a level with the wound: the edges of the fistula might be yet perceived, but they were much closer to each other. I applied one pinch of the calcined alum, and continued the same dressing.

22*d*.—The surface of the wound was level and dry; and the horse was returned to his usual exercise.

In all these cases we cannot avoid remarking the prompt diminution of the synovial discharge after the employment of an equable compression. I am induced to regard the mechanism of the healing of synovial membranes as analogous to that by which

the bloodvessels are closed when their parietes have been wounded. A portion of the contained fluid coagulates in the opening, adheres to its edges, becomes organized, and forms a part of the wall of the vessel.

Compression favouring the formation and retention of the clot, must necessarily hasten the healing of the wound.

We often see synovial fistulæ heal spontaneously; but, if we pay attention, we shall recognize the synovia arrested by the roughened edges of the fistula. The cauterization of wounds of this kind, causing enlargement of the parts, likewise intercepts the passage of the synovia sufficiently long for the clot to adhere to the parts with which it comes into contact. Cauterization produces this effect only when it is confined to the opening of the fistula; it will certainly be followed by an altogether opposite result if it reaches the divided capsule.

The following principles, then, may be applied to the treatment of synovial wounds:—

First, to abate imflammatory appearances by means of emollients, or to prevent it, if possible, by proper measures, when the accident is altogether recent.

Secondly. Appropriately to treat the injuries that may occur to the bony parts concerned in the articulation.

Thirdly. The pain being removed or relieved, to employ graduated compression.

Fourthly. To assist that compression by slight caustics, which will repress too luxuriant granulations, and produce swelling favourable to the closing of the fistula.

Fifthly. Where compression is difficult, or impossible, we should produce swelling by irritating frictions, or by the application of the hot iron to the fistula.

Sixthly. To limit, as much as possible, the action of the part until the healing of the fistula is complete.

Récueil de Méd. Vét. Août 1833.

A Case of Dilatation of the Heart, and the Formation of Fibrinous Masses in the Vessels.

By M. U. Leblanc.

About the middle of May, 1831, I was consulted by M. M. Landormy, a horse-dealer at Paris, respecting a Norman horse, about five years old, which had had an œdema of the scrotum for a long time. They attributed this to the horse not having sufficient exercise, for the stable-boys seldom took him out,

on account of his being so vicious, and particularly because, when led along the streets, he tried to kick every horse and every person that he passed.

The horse fed well, and I merely advised more exercise. M. M. Landormy had previously bled him, because he perceived that the conjunctiva was much injected.

A few days after my first visit I was again sent for; the œdema was prolonged beyond the sheath as far as the umbilicus. The horse still fed well. I made some scarifications on the scrotum and on the sheath, and recommended them to put him into harness, since he could not be easily exercised otherwise.

The œdema diminished for several days, but it afterwards returned. In the course of one night it became very much increased (this was about the 4th or 5th of June); it was prolonged behind as far as the perinæum, and before to the girths; and if it did not extend farther forwards, it was because the surcingle of his clothing, which strongly compressed the chest, opposed it. The œdema covered the whole of the belly; it was in some places not less than three inches in thickness. The horse only ate a part of his ration; but he drank with avidity. He was much quieter, and they could easily lead him in a halter.

I scarified the principal œdematous points afresh, and ordered the animal to be walked about. A great quantity of serosity ran from the wounds, and particularly from the fresh scarifications which I had made on the sheath.

The following day the œdema was considerably diminished, but much serosity continued to flow. The horse ate better and drank a great quantity of bran-water, which the grooms gave him without consulting me.

I permitted several days to pass without going to the stable to see the horse; but the groom who exercised it brought it to me every day, so that I only saw it when it had been exercised for some time. I observed that the respiration was accelerated, but I attributed this to the effect of the exercise which the animal had taken before it came to me.

The account which the groom gave me did not at all enlighten me on this point, for I only learned from him that the animal ate less and less, but continued to drink with eagerness, and that the wounds still discharged. I went to the stable on the 12th of June, to see the horse, and found him in the following state: the respiration was very slow and slightly prolonged; the pulse very weak and slow; the skin very cold on the ears and extremities; the mucous membranes pale; the air expired, hot. I had the horse brought out, and, after he had been walked about for a few minutes, the pulse and the respiration became

very much accelerated; the motions of the heart were very feeble; they were not perceptible until the horse moved, and then he tottered as he walked. On having recourse to auscultation, I could not distinguish any sound about the region of the heart, and only a slight respiratory murmur at the superior part of the breast; and we soon saw that there was good reason for this. The horse was now considerably thinner, and he only ate a few handfuls of hay and bran.

It gave me much concern to find the animal in this state, and, without knowing precisely what organ was diseased, I sometimes prognosticated a serious lesion of one of the principal blood-vessels, or of the heart or the liver; at other times I suspected an effusion in the chest.

June 13*th*.—The horse appeared better; the œdema had diminished very much; the respiratory movements were more prolonged: the horse fed a little better, and exercise did not agitate him so much.

The 14*th* and 15*th* he continued the same; the flow of serosity from the wounds on the belly continued to be very abundant.

16*th*.—The respiration was more laboured; the respiratory sound was only to be heard at the superior part of the chest. The pulse was very feeble; the right posterior extremity began to be infiltrated at its inferior part: the horse ate only a very little bran and a few grains of oats; but he still drank with avidity. I advised them to give him but a small quantity of liquid at a time.

17*th*.—The respiration was yet more laboured, and the serosity continued to flow abundantly.

18*th*.—The horse could hardly stand; he rested his head on the manger in order to support himself.

19*th*.—At six o'clock in the morning the horse fell, but I did not see him until noon. He was extended on his right side, and breathed with difficulty; his nostrils were very much dilated. The pulse was scarcely perceptible, very unequal and irregular. The body was covered with a cold sweat; the œdema had almost entirely disappeared; the scarified wounds were scarcely moist. I attempted to make the horse rise by striking him with a whip, and by sustaining him by a halter and by the tail. The limbs gave way every moment. On again having recourse to auscultation, I only heard a dry whizzing rattle towards the superior part of both sides of the chest. The belly was fallen in, the flanks were hollow, and there was fluctuation in the abdominal cavity.

I cauterized all the scarified wounds with an iron heated to a white heat. I covered the inferior parts of the chest and belly

with very strong blister ointment, and I administered three pints of red wine.

I saw the horse again at six o'clock in the evening: he was still up; the respiration was more and more difficult; the cellular infiltration of the belly and limbs had entirely disappeared. He fell at eight o'clock, and died immediately, and with scarcely a struggle.

The post-mortem examination did not take place until noon on the 20th. The atmosphere had, since his death, been hot and damp. The muscles were discoloured; the abdominal cavity contained a great quantity of limpid pink-coloured liquid; a very small quantity of food was found in the stomach and intestines; their tissues were pale and almost bloodless: the surface of the liver was of a greenish hue—its substance tore with the greatest facility; when it was divided with a sharp instrument, a few drops of fluid and very dark blood exuded: a multitude of empty cavities were visible on the surface of the cut, some being surrounded by a yellow-coloured tissue, whilst the tissue round others was of a brownish hue.

The drops of liquid of which I have spoken were mingled with some gas, which escaped from the surface of the divided tissue.

I did not observe any lesion of the abdominal vessels; they contained only a small quantity of very fluid blood, particularly the venous system. The spleen was rather larger than its natural size, and its surface was corrugated. It contained some very black blood, which was in so liquid a state that, after having transversely divided the spleen, I could almost entirely empty it, by holding its point suspended in the air. The corrugations which I before mentioned make me think that this receptacle of the blood had contained for some time past a great quantity of fluid. The aspect of the kidneys was so particular, that those about me were inclined to attribute it to putrefaction. The adipose tissue which envelopes them was more consistent and dense than it is in its natural state. These organs were not of their proper form; they occupied much less space than usual, their surface was unequal, and several very deep holes were perceptible. The exterior substance was soft; it was broken by its own weight; it had very little smell, and contained but little fluid, and was of a livid colour. The renal substance which surrounds the pelvis was flabby and discoloured, but not easily cut through with a knife. This appearance of the kidneys, which might readily be attributed entirely to putrefaction, seemed to me to be principally owing to the bloodless state of the animal before death. The dryness of the liver was also probably caused by the enormous quantity of fluid which the animal lost during

the last days of his life, and by the secretion of the serosity which was found in the serous cavities.

The pleural cavities contained so much serosity, that the lungs did not occupy a third of the pleural bags. Several portions of the inferior parts of the lungs were condensed to that degree, that they only contained air in the greater divisions of the bronchi. The tissue thus condensed, instead of being of a deep red colour, had a violet hue; it was otherwise perfectly healthy, as it was quite pervious to the air. The liquid of the pleuræ, like that of the peritoneum, was very limpid and rose-coloured.

The pericardium was also distended by a great quantity of serosity, rather more coloured than that of the pleuræ and the peritoneum. This membrane was nearly double its natural size, for, beside the quantity of fluid which I have mentioned, it contained a heart of enormous size, the surface of which was very much discoloured. The regions of the heart, corresponding with the middle of each ventricle, were flabby and sunken; their surfaces, instead of being convex, were concave. The coronary region, on the contrary, was hard and resisting. The left auricle was sunken; the right auricle very much enlarged and distended by a solid elastic body which scarcely yielded to pressure.

After having thus explored the exterior of the heart, I continued my examination, and opened successively the right auricle, the right ventricle, and their corresponding vessels, and the left ventricle and the left auricle, and their vessels.

The left ventricle was twice its natural size, and contained only a small quantity of liquid blood analogous to venous, and a little fibrinous clot, yellow, shaded with red. Its walls were very thin, and the substance of the heart was discoloured, as I have remarked of the other regions of this organ. The left auricle was also much enlarged, and contained some blood and a little fibrinous clot, which was prolonged through the pulmonary vein and reached the clot in the left ventricle. This clot was soft, and emitted much turbid liquid when it was pressed with the finger. There was nothing remarkable about the aortic trunk; it also contained rather a large clot of blood, and which appeared to have been recently formed. The inferior part of the cavity of the right ventricle contained a small quantity of very black and liquid blood. At the superior part a mass of fibrinous substance was found, which almost entirely filled this part of the ventricle. It was fixed to the septum medium of the ventricles and to the neighbouring parts by threads, which crossed in different directions; it occupied the greater part of the sinuosities which are found between the sigmoid valves, the tricuspids, and the tissue of the ventricle and of the right auricle. It almost entirely filled

this last cavity; and supposing that it existed during life (and it appears quite certain to me that, at least, the greater part did exist), there remained for the circulation of the venous blood but a very small passage at the part farthest from the centre of the heart, in the one case, from the left auricle to the ventricle, and, in the other, from the ventricle to the pulmonary artery. The superior part of the right auricle, like the inferior part of the ventricle on the same side, contained some liquid blood. The communication of the auricle with the vena cava was free. The clot was prolonged considerably into the pulmonary artery; but the greater part of it was of recent formation, and probably after death.

This mass, which I have mentioned above, was only free, as I have already said, on that surface which corresponded with the parts of the heart the farthest from the centre of that organ; it was at this surface only that the blood could circulate, for the other parts of the mass were close to the serous membranes of the cavities of the heart, and were affixed to them by fibrous prolongations. This mass was exactly moulded to the irregularities of the cavity which it filled. It almost entirely closed the auriculo-ventricular opening.

It was formed of three sorts of fibrinous matter, which, examined on the free surface and on that which was fixed, offered the following characters:—First, a layer of matter of the consistence of jelly, reddened with blood, and about an inch thick, surrounded the clot; then came a layer of yellow matter, much denser, but yielding a great quantity of fluid when pressed. This layer was not clearly separated from the third and deepest one. This third layer was white, very slightly coloured with yellow; the deepest parts of it were perfectly white; it was much denser than either of the other layers, and contained very little liquid. In general, these layers, whether considered separately or together, and as forming but one mass, were less dense and more coloured towards the open surface. That portion which appeared to me to have been formed the longest, and which was the least coloured and the densest, was behind the tricuspid valves.

I found no trace of organization in this mass, which was homogenous, although I examined the substance of each layer, equally distant from the part that I have mentioned as being formed first. The membrane on which it was fixed presented no sign of lesion.

There can scarcely be any doubt that, at least, a great part of this enormous clot existed before death; and it is probable that its formation was owing to the stagnation, or, at least, to the slowness of the course of the blood through the right cavities:

which stagnation was itself caused by the dilatation of the cavities, and the thinning of their muscular sides. It is also possible that the formation of the clot preceded the dilatation of the heart; nevertheless, I am rather inclined to the first opinion, since the heart must have been some time in becoming so much dilated, while the clot could have been much more rapidly formed.

It is not a new thing to find large clots of blood affixed to the surface of the serous membranes of the heart, and to the large vessels, and that have existed for a long time previous to the death of the animals in which they are found. All who have examined many carcasses with care must be convinced of the fact.

As nearly as I can recollect, M. Girard, jun., who was both a quick observer and a talented writer, has related some facts that are analogous to those which I have given here. Hundreds of times I have found clots of blood, diversely placed and diversely composed, in the veins of the scrotum—in the veins of the mammæ—in the testicular veins—in the veins of the lungs; especially in thick-winded horses, which occasionally present very singular aneurisms of the heart—in the venous plexuses of the nasal septum; and particularly in glandered horses, the plexuses of whose nasal veins appear as if they were injected with coloured wax—in the arterial trunks of the stomach and intestines, &c. &c.

Journ. Theorique et Pratique.

Memoir on the Malignant Fever of Swine.

By M. Roche-Lubin, *V.S., St. Affrique.*

This disease is most frequent and fatal in the arrondissement of Saint Affrique, in Aveyron. There is considerable variation in its character and symptoms. It oftenest attacks the male, and the strongest and those in the best condition, and without distinction of age. The attack is sudden and violent, and the disease runs its course with the most astonishing rapidity: in the space of twelve hours the inhabitants of a whole piggery have been destroyed by it. Sometimes, however, its symptoms are not so intense or alarming; its progress is slower; and the veterinarian has some hope of being able to combat it with success. Its nature, and the proper mode of treating it, will be best understood if it is divided into two species or classes.

CLASS I.

Symptoms.—The swine often die without the slightest precursory symptom of disease being perceived. When there are previous symptoms, they are—sudden loss of appetite—small and frequent pulse—the ears hanging down, dark-coloured, and tender—the eyes protruding, and haggard—the conjunctiva deep red—the mouth open, red, and generally filled with foam—the muzzle protruded, buried in the litter, and of a leaden colour—the respiration frequent and laborious—plaintive cries—continual convulsions; and these always preceding the appearance of red spots, and becoming gradually deeper coloured on the ears, belly, and inside of the thighs—palsy of the hind limbs—involuntary discharge of fæces highly fœtid—death ensuing in about an hour.

Post-mortem examination.—The belly is swelled—the mouth open, and of a violet colour—the tongue enlarged, black, and hanging from the mouth—black spots from one to four inches square are found under the belly, on the flanks, and on different parts of the body; and many of them run together and form large patches; when these spots or patches are cut into, a yellow or brown serous fluid escapes, and the bristles are detached with the slightest touch from these discoloured places.

The lungs are brown, and filled with blood—the ventricles of the heart are gorged with coagulated blood—the pericardium and the pleura exhibit large spots of ecchymosis—the trachea and bronchi are filled with a yellow fluid—the membranes of the brain are thickened, and covered with black coagulated blood—the brain presents points of inflammation and collections of serosity—the membranes of the spinal cord are also thickened—the whole of the spinal marrow is softened, and particularly about the lumbar region—the abdominal viscera display much disorganization—the spleen and the liver are enlarged and filled with blood—the gall bladder is contracted, but contains some thick, black and fœtid bile—the epiploon and the mucous membrane of the stomach are sprinkled with black spots; they are also thickened, of a deep red colour, infiltrated with blood or serosity, and disorganized or decomposed—the mesenteric glands and those of the groin, and the thigh have points of infiltration, black and decomposed—the bladder is thickened, of a red colour, and contains an oily and red urine—the kidneys are sometimes softened—there is a general flaccidity of the tissues, and especially of the glandular parts. There is no effusion either in the abdomen or the chest; but the lateral ventricles are filled with a bloody fluid.

CLASS II.

This comprises the swine in which the progress of the disease is less rapid, and the successive stages of which can be distinguished. The symptoms are less alarming, and the disease less obstinate. The animal is dull—always lying down—the ears hot and tender—the pulse quick, but regular—the conjunctiva red—the respiration disturbed—the flank swollen and tender—the tail hanging down—the animal takes even his most favourite food without appetite—he drinks with difficulty—he is constipated. This state sometimes continues two days without any particular change; but on the third or fourth day, at the latest, if the treatment has not been successful, the symptoms increase in intensity—the hog grinds his teeth—he trembles all over—he is convulsed—the pulse becomes intermittent—it dies away from time to time—the pupil becomes dilated—red spots appear; they acquire a deeper colour, and death is not far off.

Post-mortem examination.—The appearances after death bear considerable resemblance to those of the first class, but the alteration of the tissues is more decided; the membrane of the nose and mouth is sometimes decomposed, and the palate presents black and ulcerated spots.

Sows that are pregnant escape the attack of this malady, but when they have produced their young they lose this immunity, and the young pigs very soon follow the mothers. Swine affected with leprosy seldom labour under this disease.

Causes.—Bad food and faulty construction of the styes are the chief causes of this malady. In fact, the food on which swine are usually fed—as remnants of bad bread soaked, the refuse of fruits or grain rotten or spoiled, the fermentation and decomposition to which farinaceous substances are liable, and especially the bran which is so often given to them—are causes the continued action of which must produce great disorder in the animal economy. On the other hand, their lengthened confinement in a close place, and their lying on dungheaps which exhale the most deleterious gases, and also long journeys over miry or parched roads, and where they have been long exposed to the rigour of the seasons, must produce some functional derangements, which cannot fail of being injurious, especially when, after they have arrived at the destined farm, they are exposed to wet, or wallow all the day amidst acrid and disgusting matters. I could refer to many farms and whole hamlets where the pigs were confined, during six months, in a close stye, and where the disease was seldom long absent; but I acknowledge that I have

also witnessed instances in which the disease has scarcely spared a single animal, although the swine were properly managed and fed.

Times of its appearance.—Although there is no part of the year in which the disease does not occasionally appear, yet it is most frequent and most malignant in the summer and at the commencement of autumn.

The contagiousness of the disease.—I do not hesitate for a moment in pronouncing the disease to be contagious. Inoculation with the matter contained in these black spots, and confinement in the same stye, have produced this malignant fever in the space of a few hours.

Of the transmission of the disease by ordinary means to animals of a different species, I am unable to speak decidedly. The flesh of animals that have died from this disease has been given to dogs, and no bad effect has followed. Inoculation with the blood and ichorous matter has not been attended by any serious results in the dog; but some sheep that were thus inoculated, died in two days, exhibiting all the symptoms of malignant fever.

Prevention.—Nature and veterinary skill being altogether powerless in relieving animals attacked by disease of the first class, it is necessary to think seriously of preventive measures. It is more easy to prevent than to combat and conquer a disease. I have therefore always said to the farmers who have experienced the ravages of this malady, that they will never drive it effectually from their piggeries while they persist in their present absurd management of the hog. The plague will not be stayed until the styes are better constructed, well ventilated, not damp, and where the dung and litter are more frequently removed; until their food is more wholesome and in proper quantity; until they have pure water to quench their thirst, and in which they may bathe themselves when they are so disposed; and especially until they can no longer wallow in the filth and dung of other animals. In cold and rainy weather they should be kept within their styes. In summer their drink should be lightly nitrated, or salted, or acidulated. The whey which is produced in the manufacture of the Roquefort cheese will be excellent for those that are drooping and weak. The administration of some bitter decoction will often be useful. During the prevalence of the epizootic, I have often derived considerable benefit from small doses of camphor and nitre administered in a decoction of sorrel. These medicines, although mentioned here merely as preventives, are exceedingly useful in the curative treatment of the disease, especially when a few grains of calomel are added.

A discharge from the nasal membrane is obtained; the urine is clear and copiously discharged; and the dejections are pultaceous and abundant. This mode of treatment should be pursued eight days. If a pig is attacked, he should be separated immediately from the others. All the animals should be removed from that stye, which should be well fumigated during three days.

By these preservative means I have frequently had the happiness to see the epizootic arrested in its course; and I have driven out of use all those powders and mixtures, which certain persons used to administer as infallible, both in the prevention and cure of the complaint, but whose only effect was to make the farmer pay dearly for his credulity.

Curative treatment.—I have said that all curative treatment will fail with regard to the animals attacked by disease of the first class; and even if they could be rescued from death, they would generally fall into marasmus or become paralytic, yet it may be useful to relate the means which I have adopted.

As soon as a pig is attacked, he should be separated from the others, and placed in some comfortable place. A seton of black hellebore root should be inserted in his breast, and the decoction of sorrel with camphor, nitre, and calomel, administered; the whole of the spine, and especially the dorsal and lumbar portions, should be embrocated with hot vinegar; emollient injections, slightly nitrated or acidulated, should be administered, and aromatic fumigations made. If he seems to derive benefit from this, which will be indicated by the regularity of the pulse—the ceasing of the plaintive cries—the respiration becoming less laborious—the convulsions disappearing—the black spots not appearing—and the place at which the seton is inserted becoming swelled, there will be some chance of success. The mixture and the injections must be repeated every two hours, and the animal should be restricted to water whitened with a little barley or rye-meal. If, however, the symptoms are increasing in intensity, there is no hope of doing good, and the case should be abandoned. Bleeding at the ears or the tail is always dangerous: even used as a preventive, I believe it to be useless—it is difficult to obtain a sufficient quantity; and those that were not bled in my preventive treatment escaped quite as often as those on whom venesection had been employed. As a curative measure I am assured that bleeding is dangerous in a disease which consists chiefly in a change or decomposition of the blood: this operation will hasten the morbid process—it will undermine the strength of the patient—augment the putrid diathesis—and hasten the death of the animal.

While, however, I reprobate bleeding, I ought to acknowledge that, when I have made deep superficial punctures along the course of the spine, and, after permitting the blood to flow a little while, have plunged the hot iron into them, and especially when, in a similar way, I have destroyed the red and black spots which appear in various parts, I have certainly saved many patients. Internally I administer acetate of ammonia, in doses proportioned to the age and strength of the patient. Emollient and acidulated injections are continued, and especially if diarrhœa comes on, and stimulating frictions are applied to all the limbs. Stimulating drinks, such as wine and theriaca, tincture of asafœtida, purgatives, &c., have never been useful; and purgatives, although administered at a period of the disease which seemed to require them, many proprietors have abandoned them altogether, and have succeeded in a fair proportion of cases by adopting my mode of treatment, and which, in truth, promises to enable the agriculturist to escape, to a very great extent, from the ravages of this pest.

Rec. de Méd. Vét., Mars 1834.

Veterinary Jurisprudence.

TAUNTON ASSIZES.

Nisi Prius Court (before Mr. Baron Williams).

PALMER *v.* GREVILLE.

THIS was an action to recover the sum of £18, the value of a mare sold by the plaintiff to the defendant. The defence was, the mare had a defect in her eyes, and therefore was not sound.

For the plaintiff a number of witnesses, and among them a veterinary surgeon, were called, who swore that the mare's eyes were very good when sold, and were so at the present moment. The mare was brought to the door of the court, and examined by the plaintiff's witnesses, and also by two veterinary surgeons, in behalf of the defendant.

The first witness for the defendant (who is a surgeon) stated, that he tried the mare before the defendant had bought her, and that both her eyes were then bad. One of the veterinary surgeons stated, that she had a speck on the lens of the off eye, but the near eye was very good. The other surgeon said that there was a speck on the near eye, but that the off eye was perfectly sound.

The doctors for the defendant having so perfectly disagreed, the jury found a verdict for the plaintiff for the amount claimed.

Will not this strange report (copied from the *Times*) induce some one concerned to tell us a little of the truth of the matter, and wipe away some of the disgrace from himself and his profession?—EDIT.

Miscellanea.

AMERICAN ANECDOTE OF FAST DRIVING.

"I ONCE took an Englishman with me in a gig up Allibama country, and he says—'What's this great churchyard we are passing through?' And, 'Stranger,' says I, 'I calculate it's nothing but the mile-stones we are passing so quick.'"—*Jacob Faithful.*

THE EFFECT OF THE DAM'S HABITS ON THE UNBORN OFFSPRING.

The effects which the parent's habits have on their unborn offspring are very extraordinary. In breaking in a mare, which was afterwards found to be in foal, it was necessary to lunge her frequently in a circle. When the foal was born, and was strong enough to do so, it began to move round and round incessantly, and continued this practice for a considerable length of time.—*Jesse's Gleanings in Natural History.*

THE EXTRAORDINARY EFFECT OF CLIMATE ON THE COLOUR OF THE HAIR OF HORSES.

IN the West Indies black cattle are the most plentiful of any, and animals of this colour are the only kind that are fit for Jamaica work. The white-coloured cattle are terribly tormented by the insects, and they are weak and sluggish in proportion to the quantity of white hair they possess. "But with respect to horses," says Monk Lewis, "I am told that such a thing as a black horse is not to be found in the island: those which may be imported black soon change their colour into a bay; and colts are said to have been dropped perfectly black, which afterwards grew lighter and lighter till they arrived as being perfectly white."—*Journal of a West India Planter.*

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MR. YOUATT'S VETERINARY LECTURES,

DELIVERED AT THE UNIVERSITY OF LONDON.

LECTURE XLII.

The Gastric, Hepatic, and Splenic Plexuses of the Tenth Pair of Nerves.—The Cerebro-visceral is the Motor Nerve of the Stomach.—The Functions of the Stomach of the Horse and the Ruminant.

WE had traced the cerebro-visceral nerve to the œsophagus, where it was about to pierce the diaphragm and to enter the abdomen. The right nerve was attached to the under surface of the gullet, inclining to the right; and the other branch had found its way to the upper surface, inclining to the left. The left branch is the larger of the two. Their fibres of intercommunication here increase in number. I cannot say that they form a plexus, although it has been so described; but there are more frequent anastomoses between their branches, in order, it would seem, that the diffusion and connexion of their influence should be complete before they leave the thoracic cavity. I cannot trace any branches to the diaphragm. The œsophagus passes obliquely through the grand scissure between the crura of the diaphragm, separated from that muscle by cellular substance, and these nerves accompany it, clinging to its external coat, and enveloped in the same substance.

The Gastric Plexuses.—The œsophagus has no sooner entered the abdomen, than these branches of intercommunication become more numerous, and a real plexus is formed about the base of the œsophagus, through which, however, the two nerves can be traced distinctly. They gradually separate more from each other, and before it actually reaches the stomach the left nerve divides into two branches.

The Ramifications of the Left Nerve.—The one spreads over the upper part of the stomach, sending ramifications in every

direction; several reach the cardiac orifice; others pursue their radiating course over the smaller curvature of the stomach; and there they meet and anastomose freely with ramifications from the right nerve, which had been distributed over the same portion of the viscus; so that there is communication of the fibres, and blending of the influence of both nerves for some important purpose. The other division of the left nerve crosses above the stomach towards the left; it pursues the course of the gastric artery, and reaches and contributes to form the great semilunar ganglion. I have said that the left nerve, even before its entrance into the abdomen, was larger than the right: the difference of size is more evident within the abdominal cavity; and the reason of this superiority of bulk in the left nerve is now sufficiently plain, for it has an additional and a most important duty to discharge.

The Ramifications of the Right Nerve.—The right nerve runs on to the stomach, and distributes many filaments about the cardiac orifice, and then divides into several branches; some go to the smaller curvature, where, as I have said, they anastomose with ramifications from the left nerve; others supply the greater curvature; they spread over the under part of the stomach; they give branches which can be traced to the spleen, and others which reach and entwine round the pyloric orifice, and they are not lost until they have travelled far down the duodenum. A considerable branch has previously been sent to the liver; and amidst all these ramifications the nerve terminates, and is seen no more. The French might, therefore, with some propriety, call it the pneumo-gastric; for it is given to the stomach and its dependencies as well as to the lungs, and it is far more a gastric than a pulmonary nerve: but it is connected directly with all the thoracic viscera, and with those of the abdomen, as far as the duodenum, and with all the rest by means of its communication with the semilunar ganglion.

It is an Organic Nerve.—We do it injustice when we merely term it a *respiratory* nerve, or when we consider all its ramifications, and all the viscera on which it bestows its influence, as merely subsidiary to the function of respiration. I have called it the cerebro-visceral *motor* nerve, and we will now inquire how far this title is applicable to it within the abdomen.

The Progress of Experiments on the Influence of the Cerebro-Visceral Nerve.—The earliest experiments that were made on the influence of the cerebro-visceral nerve had reference to the function of respiration. Whether the mere branch of this nerve, the recurrent, or the main trunk of the nerve, (and these were generally confounded), was divided, there resulted manifest

disturbance in the respiratory function, and, sooner or later, death. This, as the most evident and palpable effect of the division of the nerve, engrossed almost the sole attention of physiologists. Its influence on the action of the heart (circulation and respiration are functions nearly connected) was next inquired into: but this was an organ *sui generis;* it was endowed with an inherent principle of contractility; if supplied with blood or even with warm fluid, it would beat on, although this nerve was divided; nay, although the organ itself was removed from the body. At length the influence of this nerve on the process of digestion became the subject of inquiry. This is a slow process; there is nothing about it that at once arrests the attention; it is merely the gradual change of the food into a uniform pulpy mass. I will not detain you, gentlemen, with a narration of the numerous experiments instituted by physiologists with reference to this function, many of them ingenious, others without rhyme or reason; some apparently leading us on to a satisfactory conclusion, and others strangely inconclusive and contradictory: some conducted with a spirit of philosophic humanity; and others with a disgraceful recklessness of animal suffering: but I will very briefly give you the ultimate result.

The Influence of the Cerebro-Visceral Nerve in the Process of Digestion.—When the cerebro-visceral nerve is divided, and not only so, but a portion of it excised, so that the nervous influence shall be completely cut off from the stomach, digestion, or the solution or chymification of the food, is not suspended, but only delayed. Those portions which are in contact with the villous coat of the stomach become dissolved; but those that are a little within the mass of ingesta, and out of the reach of the gastric juice, are unchanged. M. Magendie divided the cerebro-visceral nerves in the thorax and immediately above the diaphragm. All disturbance in respiration which might possibly produce derangement of digestion was thus avoided, and the true influence of the nerve on the functions of the stomach would be seen. He says, that, after having allowed a proper period to elapse, the substances were *chymified*, and they furnished afterwards an abundance of *chyle*.

MM. Breschet and Edwards instituted numerous experiments to ascertain the kind and degree of nervous influence in the process of digestion; and they arrived at this conclusion, which may now, I believe, be taken as a physiological fact,—that the gastric juice is the solvent principle or agent, and that the function of digestion is performed and completed by the different portions of food being successively brought into contact with this

fluid. We are not yet prepared for the inquiry into the power or influence by means of which the gastric juice is secreted; but we can no longer doubt that it is by the stimulus of the par vagum on the muscles of the stomach that the elementary mass is brought into repeated and sufficient contact with this juice.

The Muscular Coat of the Stomach.—I need not tell you that the second or central coat of the stomach is a muscular one, and of singular construction, consisting of two layers of fibres, intersecting each other; the one small and few in number, running longitudinally, and the other large and numerous, running circularly. You may plainly perceive how these fibres are multiplied and strengthened around the cardiac orifice, so as to form not precisely a sphincter muscle, nor a valve, but a strong, and, in the horse, an almost insuperable obstacle to the regurgitation of the food. At the pyloric orifice they are also increased in number and strength, constituting to the required extent, and, as it regards solid matter, a true sphincter muscle. These muscles effect some important purpose, or they would not be placed around the stomach and so curiously arranged there; and they are supplied by the gastric portion of the cerebro-visceral nerve alone. While the filaments from the semilunar ganglion, diffused likewise over the stomach, pass with the arteries through the coats of this viscus, and are lost in its interior surface, the cerebro-visceral is seen pursuing its course between the peritoneal and muscular parietes, and evidently expending and losing itself on the muscular coat.

Illustrations of the Influence of the Cerebro-Visceral Nerve on the Stomach. It prevents Vomiting.—The œsophagus is not inserted into the stomach of the horse vertically, nor does it at once penetrate the parietes; but it runs obliquely between the muscular and cuticular coats for some distance, so that the contraction of the muscles at the base of the œsophagus, or around the cardiac orifice, will obliterate, as it were, the canal, and render the regurgitation of the food almost impossible. Every contraction also of the circular fibres of the stomach generally, and particularly of those about the cardiac region, unite in producing the same effect, and preventing the act of vomiting; a liability to which would be inconvenient in a slave, the utmost exertion of whose powers is required at every call of necessity, or freak of caprice, in sickness or in health, or whether the stomach is full or void.

The difficulty of vomiting in the horse depends not upon any construction of the velum palati, or posterior part of the mouth, but simply upon the ureter-like manner in which the œsophagus

enters the stomach, and the power of the muscular fibres at the base of the œsophagus or in the parietes of the stomach to diminish or obliterate the canal.

It forces the Food from the Cuticular Division of the Stomach.—The left portion of the stomach of the horse,—the lesser curvature,—is lined by a cuticular coat. No gastric juice is secreted there; but the food is detained as in a kind of reservoir, and undergoes a process of maceration, by which it is better prepared for the action of the true solvent fluid. It is by the contraction of the circular and longitudinal fibres of the muscular coat of this part of the viscus, that the food, as soon as it is thus prepared, is forced out of the reservoir into the real digestive stomach, and the cerebro-visceral nerve is the agent in producing this contraction.

Keeps it in contact with the Mucous Coat.—When the food is brought into the larger curvature, be it in a greater or less quantity, all the muscular fibres contract, and keep it in approximation with the mucous coat, and consequently in contact with and imbibing the gastric juice; and that as perfectly when it is nearly empty, as when distended to the utmost.

Exposes every Portion of it to the Action of the Gastric Juice.—The separate parts of the muscular coat have the power of successively contracting and relaxing; and thus, in the language of Dr. Bostock, in his invaluable "System of Physiology," and which should find a place in every veterinary as well as medical student's library, "the successive contraction of each part of the stomach, by producing a series of folds and wrinkles, serves to agitate the alimentary mass, and, by bringing every part of it in its turn to the surface, to expose it to the influence of the gastric juice; while, at the same time, the whole of the contents are gradually propelled forwards from the orifice which is connected with the œsophagus, to that by which they are discharged."

Office of the Pylorus.—Last of all, the food, more or less dissolved, reaches the pyloric orifice, which is furnished not only with a valvular fold, but with a sphincter muscle, in order to resist, when occasion requires, this onward pressure, and to return the alimentary mass until the chymification is complete. The mechanism of this outlet is not perfect, nor its function thoroughly performed in the horse; for his stomach, compared with his size, is strangely small. It was designedly made so, that it might not press too much on the diaphragm, or painfully or fatally interfere with the process of respiration, when his utmost energies were occasionally taxed immediately after he had been fed. The food, therefore, remains in his stomach but a

little while, and it passes through the pylorus very imperfectly digested; while liquids flow through it as soon as they are drunk.

The Function of the Duodenum.—This, however, is fully counterbalanced by the increased size, and muscular and villous coats of the *duodenum*. In other animals, this portion of intestine has been considered as devoted entirely to chylification; but the previous process—the conversion of the food into chyme—has been very imperfectly performed in the stomach of the horse; and therefore we want, in the upper part of the duodenum, a kind of second stomach,—a similar muscular apparatus to compress and to mix up and dissolve the food. That apparatus is evident enough, and also the branches of this nerve, ramifying over the duodenum, and ceasing before we arrive at the pancreatic and biliary orifices. Its mucous coat also is far more vascular than that of any of the other intestines. I might go further than this, and assert with Magendie, that the phenomena of digestion may be observed in the whole intestinal canal, and even in the great intestine of the horse; but this belongs to the digestive system, and will afford a beautiful illustration of the adaptation of the animal to the purposes for which he was destined.

The Function of the Cerebro-Visceral Nerve as it regards the Stomach.—Then, observation of the course of this nerve, and the mechanism of digestion, unite with the result of experiment in determining its proper function. It is the *motor* nerve; it has to do with the mechanical part of the affair; it has to keep the parietes of the stomach in contact with the food, and the food in contact with the gastric juice; it has to bring the different parts of the food in successive contact with the stomach, and to propel them through this portion of the alimentary canal, in order that they may be discharged into the duodenum. The other part of the business,—the production of the solvent menstruum,—is referrible to another influence.

The Influence of the Cerebro-Visceral Nerve on the Stomachs of Ruminants.—Let us turn to another of our patients, and the case is yet stronger. The food hastily gathered by the *ox* passes into the *rumen*, and there it is retained in an immense reservoir, macerating in the mucous fluid secreted from the cuticular coat of the paunch, and the portion of liquid that occasionally breaks through the floor of this œsophagean canal. Soon after this viscus is filled, the process of rumination commences. The food is returned to undergo a second mastication: but, how returned? Why, in the precise order in which it was swallowed, and has been prepared by this maceration for its return. This is effected

by a slow revolution of the food through the various compartments of the rumen; and that is accomplished by the alternate contraction of the longitudinal, and circular, and oblique muscles, for they are not only strong, but they run in every direction. Here, too, the successive contraction of the different parts of the stomach agitates the alimentary mass, and brings every portion of it, in its turn, into contact with the mucous secretion; and all this is effected by no spinal motor nerve (for no one can be traced to the stomach), but by this cerebro-visceral one, which is seen ramifying in every direction under the peritoneal coat.

A portion of the food which was first received is now, by some voluntary effort (the will is not excluded from every part of the process), brought over the valve-like projection which separates the rumen from the reticulum—the first stomach from the second. This pellet being received into the honeycomb, all voluntary influence and power for awhile cease, and the cerebro-visceral takes up the work; and it compresses the pellet, and forms it into the proper shape to reascend the gullet: and it squeezes from its beautifully arranged cells a viscid fluid with which the pellet is enveloped; and then by an act partly voluntary, or in which (and that is the essence of our system) many voluntary muscles are brought to lend their aid to the involuntary or organic ones, the pellet breaks through the floor of the canal, and by the same mingled influence reascends the œsophagus; is subjected to a second mastication; and is once more swallowed; and, being reduced to a semifluid form, has no longer sufficient momentum to break through the œsophagean canal, but passes on to the third stomach.

There again the cerebro-visceral acts, and acts exclusively. The food has been twice masticated, but there may remain some hard fibres which would resist the solvent power of the gastric juice. These are taken up by the leaves of the manyplus, and a new action commences—a triturating grinding motion: the animal is not conscious of it; it is a purely organic affair; and these fibres are mechanically rubbed down between the roughened papillated leaves of the manyplus. In accordance with this, there are here, compared with the size of the stomach, muscular fibres ten times stronger than in the paunch, and there are far more abundant ramifications from the cerebro-visceral nerve.

The food is at length prepared for digestion, and enters the fourth or true stomach; and there is the muscular action of the parietes of the stomach, and all its effects, as I have just described in the horse. I have dwelled at considerable, I trust not tedious, length on this part of my subject, for the stomachs

of the ruminant afford the most varied and satisfactory illustration of the function of the cerebro-visceral nerve, and prove it to be an organic motor nerve.

The Sensitive Influence of the Nerve.—I have not forgotten the ganglion curiously belonging to this motor nerve, nor the possible or probable sensitive influence which it bestows; namely, that kind of sensation which belongs to organic life—a consciousness of healthy or of deranged action: nor have I forgotten the wide and perfect sympathy which must exist between the various parts of so complicated a machine, that it may act orderly and beneficially; and I can conceive, that by anostomoses with other parts of this nerve, and more particularly with the great organic nerve with which it is already so closely united, and with which, by-and-by, it becomes intermingled—I say that I can readily conceive how, by anastomoses between these and fibres from the sensitive nerves of the spinal column, an indescribable but real feeling of pleasure should accompany the discharge of many of the organic functions, and pain, and sometimes to an acute degree, should mark the departure from healthy action.

The Hepatic and Splenal Plexuses.—As to the fibres, which can be plainly traced to the liver and spleen, we know little of the minute structure of either, and the function of the latter is not yet determined; but there are nutritive vessels in both: there are vessels conveying the fluid from which the biliary secretion is formed, or which is to be retained in the reservoirs of the spleen; there are vessels to carry away the secretion or the residuum; there are important functions to be performed; and therefore I can easily conceive of the agency both of the motor and sensitive fibrils of this organic nerve,—the motor ones concerned with the mechanism of the part, and the sensitive ones with peculiar or sympathetic organic feeling and co-operation. But it is time to return to the medulla oblongata and its lateral column.

RABIES IN SHEEP.

(Extract of a Letter from Mr. W. Baker, *V.S., Sudbury.)*

Agreeably to your request, I will endeavour to give you some account of the symptoms and post-mortem appearances in Col. Addison's sheep, as far as I can recollect them, not having taken any note of the cases at the time.

I think it was about a month after the rabid dog had been among the flock, that the Colonel requested me to ride up and see three sheep, which exhibited very unusual symptoms. The

first had been ill about twenty-four hours; he had been running at different objects so violently as to lay bare the frontal bones. When I entered the fold, he was drinking filthy water, obtained by having scraped a hole with his fore foot, and which filled with the drainings of the dung. I approached him with a stick, which I held out, when he made a rush at me, and then nibbled at the stick. This sheep continued in nearly the same state for four days, except getting gradually weaker. The other two exhibited the same symptoms until the third day, when I found them lying on their sides, and unable to rise. One sheep died on the fourth day; the first taken died on the fifth day; the other, which had been lying forty-eight hours, was destroyed.

I examined the sheep that was first taken as well as I was able, but I could not get any one to touch the animal, or to afford me the least assistance. The stomachs were filled with dirt, filth, and indigestible substances, as stones, sticks, &c. They were inflamed in patches, but not generally so. There was an uncommonly fœtid smell when they were opened. The liver was unusually pale. The lungs were a little flushed, and had a few almost black spots, about the size of a hazel-nut: there was likewise some inflammation about the fauces. The brain was not examined.

A NEEDLE IN THE TONGUE OF A HORSE.

By Mr. W. Young, *V.S., Muirhead of Garnkirk, N. B.*

On the 13th day of September, 1833, a chesnut gelding was shewn to me, the property of Mr. J. Callender, innkeeper, near this place, who said that he had eaten almost nothing for the last three weeks, although he had had his teeth rasped. He thought there was something wrong about his throat, as he could not swallow, although he was quite hungry for meat. The pulse was about the natural standard, the countenance dull, fœtid breath, much enlargment in the channel under the lower jaw, and rising within the mouth around the frænum of the tongue, of a dark pale colour there, and very tender: on one side of the tongue was a laceration, as if done by the ragged edges of the grinders.

I was of opinion that the source of irritation was under the tongue. I could not arrive at any known cause for this, nor any account of violence done to the tongue. I rubbed the external enlargement with stimulating liniment, and inserted a rowel a little superior to it.

17*th.*—It was reported to me that the external tumour was certainly ready to be opened. I punctured it with a lancet, and

much laudable pus escaped. The horse drank more gruel after the puncturing than he had done for a week before, but cannot take any solid food. The rowel was discharging well. Injections were thrown into the cyst of the tumour, and a pledget of tow put into the orifice of it.

22*d*.—I was told that the horse was much duller, and on the morning of the 23d he was lying dead.

The abdominal viscera were healthy. The lungs were loaded with blood. I separated the head from the trunk, and cut transversely upon the tongue nearly opposite the second grinder, and, to my astonishment, I found a needle lying longitudinally, and which had penetrated from the side to the inferior portion of the tongue. It was one inch and a quarter in length, and the neighbouring substance was in a state of gangrene. I have no doubt that the death of the horse was occasioned by this needle.

HYDROTHORAX AND HYDROPS PERICARDII, WITH A PIECE OF WIRE IN THE PERICARDIUM OF A COW.

By the same.

On the 20th of February, 1834, I was requested to visit a cow, five miles from this place, belonging to Mr. J. Cross, which had been five days ill. The first three days she had tossed her head about, and pawed with her feet, as if in great pain. They had bled her twice, and she had been similarly attacked in November last 1833. Pulse accelerated; every act of inspiration attended with a pause; expiration with a moan; extremities not very cold; dull look; small quantities of dung of a dark colour; falling off in flesh; inclines to lie more than stand, and drinks more than she eats. Ordered laxative medicines mixed with gruel at stated intervals, until the bowels were well acted upon, which happened on the third day.

27*th*.—I was informed that the cow appeared to be dying fast. She was swelled all over the breast, between the fore legs, and below the jaws. Ordered punctures over the swellings and setons, and diuretic medicine internally.

This was continued until March 5th, with no decided benefit, on which day I visited her. It was then evident that she had hydrothorax. I was suspicious of diseased heart, from the recollection of symptoms in other cases. I desired them to make her comfortable, and to give her what she was inclined to take, it being now a hopeless case. Many of the sons of wisdom,

however, passed their verdict upon her, and declared that she was witched, dented, elf-shot, tail-slipped, or weeded; all diseases common among that class of persons whom I denominate knights of witchcraft and quackery.

18*th*.—She died. The abdominal viscera generally were diseased; the gall-bladder was distended with dark bile; the paunch adhered anteriorly to the diaphragm, and on cutting upon it there appeared to be a fistulous opening through the diaphragm. Three gallons of green fluid were contained in the thorax. The pericardium was enormously distended, and full of yellow cream-coloured fluid to the amount of three gallons and half a pint; and in it was a piece of wire three inches and a half long, seeming to be half of a hair pin. The pericardium was thickened, and on an average an inch thick. The external surface of the heart yellow and incrusted.

SINGULAR OBSTRUCTION OF THE ALIMENTARY CANAL IN A MARE.

By the same.

On the 27th of March, 1834, I was requested, about seven o'clock, A.M., by a farmer near this place, to visit an aged mare; but being called previously to a distance of seven miles, I did not return till about three o'clock, P.M., half an hour previous to which a message was left that I was not now wanted. On the following day, about two o'clock, P.M., the owner of the mare came to me, saying he was sorry that I could not be found yesterday, as his mare was no better, and had eaten nothing since the morning of the 26th. She had ploughed that day, but was very dull; she had had no evacuation since that time. He had watched her on the night of the 26th; she was only down once. He gave her nothing, still putting it off as long as he could (truly so, until death was at hand), and, when I could not be had, sent for a smith, who gave her, on the 27th, half a bottle of lamp oil, and half an ounce of croton oil after it, and was of opinion that she would soon be better. He also ordered another half bottle of lamp oil to be given in the evening, if she had not a passage by that time. There had been no passage this morning, and the farmer again went to the smith, and informed him that she was no better. The smith gave him a recipe, which he handed to me, containing three ounces of castor oil, half an ounce of croton oil, an ounce of laudanum, and two ounces of turpentine, which he was to procure, and put into her as he could. He had tried, he said, to put it down her throat, but

she had "*spued*" it up again: he then put it down her nostrils, and she had been sick ever since; and, as he had no skill himself, and thought that two skilful men were better than one, he wanted me now to visit her. I did so promptly, and found her standing trembling all over. The pulse was imperceptible; the extremities icy cold; respiration accelerated; and she had been only twice down since she became unwell.

I prognosticated that death was near at hand; nevertheless I opened the jugular vein, and after about three quarts of black-coloured blood had escaped she lay down, and had violent convulsive twitchings for about ten minutes. I threw up a clyster, and applied warm fomentations to the abdomen. The clyster was returned with a few balls of fæces. She got up, but in about eight minutes again lay down, discharged a considerable quantity of fæces, struggled, and died.

On dissection I found a large fæcal accumulation, very dry, near the termination of the colon, and immediately preceding it was a quantity of sand, gravel, stones, coal, pins, a piece of wire, a piece of sheet iron, and half a stub-nail: the whole weighed forty-one imperial ounces. There was also a rupture of the villous and muscular coat of the intestines, about five inches in length, with spots of inflammation irregularly scattered on the large intestines. The bladder was quite empty; a portion of the villous coat of the stomach was inflamed, with eight bots adhering to the cuticular coat. The lungs were dark, and congested with blood.

THE NON-EFFICACY OF THE ERGOT OF RYE ON THE COW IN PARTURITION.

By Mr. HARRISON, *V.S., Lancaster.*

THE very flattering account of the medicinal powers of the Secale Cornutum in protracted parturition, given in a former number of THE VETERINARIAN by Mr. Allison, induced me, in a tedious case to which I was called, to test its effects; but, with much regret, I am compelled to acknowledge that, during the whole time it was administered (and, to insure its more perfect action upon the system, I slowly poured it down the œsophagus in order to avoid, if I could, the possibility of its entering the rumen), no perceptible contractions of the uterus ensued; neither was she incommoded by it in any even in the slightest manner, thereby affording a demonstrative proof of the uncertainty of its operation, and totally subverting any ideas of

its deleterious effects. This uncertainty of effect will materially reduce the value of the ergot of rye with veterinary practitioners.

The case was a middle-aged cow, that, with the exception of a lame foot, was perfectly healthy. On the 12th of last month she displayed evident signs of calving, and these continued until the 15th, at which time the owner, fancying the calf to be dead, wished me to extract it. Upon examination the os uteri was sufficiently dilated to admit the free introduction of the hand, and, after keeping it within the uterus for some length of time, not the least contraction was perceived. Having great faith in the ergot, I determined, with the owner's permission, to give it; and accordingly ʒi, in a bruised state, was made into a decoction in one pint of water, to which was added a small wine glass of gin, and this was given at nine o'clock in the morning. At eleven ʒii powdered were given in a pint of warm water and a little gin. At twelve o'clock, no pains having been produced, ʒii were administered: at three, six, and nine o'clock, two additional drachms of the powder were administered.

No effect having hitherto been produced, I determined, although my faith was much weakened, to continue it; accordingly, at twelve o'clock, another ʒii were given; and at three and six o'clock on the morning of the 16th, the same doses were repeated. At nine o'clock, no effect having yet appeared, and my fears of any pernicious consequences from the administration of the ergot having disappeared, I administered ʒi in a decoction, and at twelve o'clock another ounce.

One o'clock having arrived, and the animal being still very placid, my faith in the powers of the ergot was completely shaken, and the owner's patience exhausted, and I proceeded to extract the calf, which I fortunately accomplished.

ON REDWATER.

By Mr. J. Steel, *V.S., Biggar, N.B.*

I shall be glad to learn, from some of your correspondents, the best method of treating *Redwater* or *Moor-ill* in cattle, as it is termed in this part of the country. It was raging here last spring with great violence; the cows were seized with it about two weeks after calving in every case that I have seen except one. I have met with several cases every year since I commenced practising, but never lost a patient until the last year; and in the course of that year I lost three patients, two of which, indeed, were far gone before I saw them.

My method of treating this species of redwater is by giving

sulphate of magnesia and olive oil according to the age and strength of the cow, with alterative doses of antimony and nitre, and emollient drinks. Up to the last season I used to draw blood, but then the debility was so great that I was afraid to bleed.

The disease seems to be most prevalent on the banks of the Clyde. I know of one farmer that keeps sixteen cows, and had five cases of it; another that keeps twelve had five cases; and a third that keeps ten has had three seized.

There are many recipes among the farmers for the cure of the disease, such as barks and treacle, strong ale with salt, and Glauber salts. Some give frequent doses of diapente with anise seeds; one farmer gives two pounds of salt, one ounce of turpentine, one ounce of nitre, a small quantity of salt of tartar and diapente; and all give great quantities of water, perhaps two or three watering pailsful. I allow them as much water as they will drink, and, perhaps, drench them with a few extra bottles.

When the disease is coming on, the cow seems rather dull; then she is observed to pass urine of a high colour; it soon approaches to a perfect red, and sometimes it becomes black. The pulse is 80, 90, or 100, and upwards, having a particularly full beat. The back is always a little raised, and there is an inclination to strain considerably in the evacuation of the fæces: she voids her urine frequently; but, in a few cases, the urine and fæces are retained altogether. The eyes are sunk; the abdomen tender; and at times the cow is afraid to put the parts into action: one of the fatal cases that I had was of that description. In another case of the same kind that I was consulted about, where the urine and fæces had ceased to come away, I gave a purgative, with ℥i of nitre, and the cow got round. The disease sometimes commences with diarrhœa, when, if a purgative is given, and a little laxative medicine for a few days afterwards, she will soon get well; but if she is then neglected, the costiveness becomes extreme; and when the patient dies, the manyplus is found dry, and as hard as a stone.

I have had the opportunity of seeing one only after death. The uterus had spots of inflammation; the gall-bladder full of a fluid similar to the urine which the cow was passing; the manyplus was rather hard and dry; the kidnies had a relaxed bleached-like appearance. I could observe nothing more wrong.

How is it to be explained that this disease should come on exexactly two weeks after calving? May it not proceed from some unnatural alteration or derangement of the uterus? In the cows that are seized the second cleaning does not drop away. May it not be that the secretions of the uterus, instead of following the

common course, are taken into the circulation, and stimulate and inflame the kidnies? The blood must be impure, for when it is drawn it very much resembles the urine. There is sometimes no other difference than that the blood coagulates, and the urine does not. The debility is early and excessive.

We beg leave to refer Mr. Steel and our readers generally to the 16th No. of "Cattle," published in the Farmer's Series of the Society for the Diffusion of Useful Knowledge, and where the subject of Redwater is treated of at considerable length.—EDIT.

CARCINOMATOUS AFFECTION AND ENORMOUS ENLARGEMENT OF THE SPLEEN.

By Mr. J. ANDERSON, *V.S., Leicester.*

ON the 18th of January last I was requested to visit *Contraband*, a dark brown stallion, rising eight years old, half an inch less than sixteen hands high, the property of Edward Hobson, Esq. Humberston Lodge. When four years old, he was the best racer in the county. He won the Billesdon Coplow stakes at Croxton Park, and several others. He has hunted two seasons, carrying 14 stones, and has sometimes been ridden three days successively.

I accordingly attended and found the patient feverish, with the testicles drawn close up to the body; the left testis exceedingly enlarged, but with no appearance of acute inflammation. The pulse was 60; the bowels regular: he looked dull and spiritless. John Woods, the groom, who is a very intelligent man, and is above the common run of his class in horse-knowledge, was doubtful whether cancerous tumour did not exist, as he had seen the same symptoms at Mr. Richard Smith's, when a horse that died, and was opened by Mr. Baker, was found to contain a tumour that weighed 84lbs, but there was no bloody urine.

He had given the stallion a physic ball, and, for some time past, an ounce of aloes purged him more than ʒix had previously done. He had also given pulv. digitalis, tart. antimon., and nit. potassæ. I caused the testicles to be suspended, and to be kept wet with a Goulard lotion, and the fever medicine to be continued. I at first considered that I should here have a case of scrotal hernia.

On the 25th I revisited the patient, and found him in a convalescent state, and, by report, he got into a tolerably good condition.

I did not see him again until the 7th instant, three days previous to which he was attacked with violent hæmaturia, or the voiding of bloody urine. When I pressed my hand over the region of the kidnies, he crouched almost to the ground. The conjunctival and Schneiderian membranes were highly injected; the testicles were hanging low, swollen, and very hot; appetite impaired; but there was great thirst, with considerable dulness. The breathing was not affected, nor was there any cough. There was stiffness about the loins; shifting of the hind legs, keeping them apart; and the horse constantly appeared to be in the attitude of staling. There was tenesmus; the bowels rather open; a staring coat; pulse 62, and hard. From these symptoms I was led to consider that he laboured under nephritis.

The horse had been bled by the groom. I ordered six quarts more to be taken away immediately, and this repeated in twelve hours if the horse was not better. The buffy coat was uncommonly thick. I administered an enema of warm water and soap, and applied scalding fomentations over the loins; and mustard poultices, spread on a newly-stripped sheep skin, were kept on three hours. ℞ superacet. plumbi ℈j, catechu ʒiv, sulph. zinci ℈ij, conf. rosæ q. s. Beat this into a ball, and give it daily.

12*th*.—The horse still laboured under considerable fever. Pulse 80. The patient was much emaciated, and ate but little. Great quantities of coagulated blood had been discharged. Repeat the venesection to six quarts; keep the testicles still supported, and apply frequently aqua. ammon. acet. Take of tart. antimon., pulv. digitalis āā ʒss, bals. copaib. ʒij, linseed meal ʒij. Make this into a ball with conserve of roses, and give one daily.

13*th*.—The hemorrhage still continues; but the inflammation, both general and local, is subdued. The horse does not flinch when pressure is made on the loins; pulse 67: continue the medicine, giving also a pint of lime-water twice in the day; keep the scrotum wet with the Goulard lotion, and supporting it with a bandage, applying also a large charge over the loins.

18*th*.—Still getting worse; immense quantities of blood coming away; refuses his food; pulse 68; does not appear to be labouring under much pain; bowels very lax. ℞ superacet. plumbi ʒss, catechu ʒv, sulph. zinci ℈ij, conf. rosæ, q. s. Make into a ball, and give one every morning. Give also a drink at night, composed of pulv. opii ʒss, pulv. alumen ʒj, aqua menth. pip. ℥viij.

22*d*, noon.—I found the patient turned out of the stable, and put into a shed at a distance: has passed a great deal of blood since last visit; at present it is dropping from him. Pulse 72; debilitated. Testes drawn up.

Mr. Rowland, V.S., Oton, Notts. arrived, and held a consultation with me. We had different opinions as to the nature of the complaint and mode of treatment: however, both agreed that the disease originated in the kidneys; but neither of us anticipated the existence of such a voluminous tumour, nor, if we had, could medicine have been of avail.

Mr. R. took the case into his own hand, and informed me he should give the barks and dragon's-blood.

At half past two o'clock a ball was given, and another at nine P.M. On the 23d, at one A.M. he died. Ten hours after death, a post-mortem examination took place by Mr. R. (at which, I think, I ought to have had the opportunity of being present), when a tumour was found attached to the spleen, left kidney, and super-renal gland. The right kidney and the viscera were found in a healthy state. The tumour weighed 102lbs, circumference 68 inches, and, including the spleen, 73 inches. As I transmitted it to you the same day he died for your examination and opinion, I shall not enter more fully into the case; however, two things are certain—previous inflammation, and death by excessive hemorrhage.

Hoping this memoir will enable you to give a satisfactory explanation of this extraordinary growth or tumour, I am, &c.

The specimen referred to by Mr. Anderson, and for which we beg to return him our thanks, was the most splendid we have ever seen. It consisted of a conglomeration of *carcinomatous tumours,* rising one above the other, on the gastric surface of the spleen. This viscus was curiously stretched out, to afford, as it were, a bed or support for them, and still retained, on its exterior or parietal surface, much of its natural appearance, except that it was considerably paler than it is found to be in its healthy and natural state. A little rim or edging of spleen surrounded the base of the aggregated mass, and a small portion of its posterior pyramidical extremity was loose, and, if we had judged by its external appearance, unaffected.

On cutting, however, into this portion, the original seat and the nature of the disease were evident. We saw small portions of this viscus changing their colour; there were all shades of change; and the altered parts were of various size and structure. There were a few spots in which there was no change of structure, but only a paler hue; there were others in which there was increased density of structure, and the colour was a reddish grey; and in others there was still greater solidity, and a more perfect white colour. Some of these tumours were not larger than a millet seed, others were as big as an egg. The smaller

ones were of firmest consistence; the larger ones presented more of the appearance of the substance of the brain; and this was more perfect in the still larger ones, and some of them individually of great size, which were collected on the concave surface of the spleen. It was a *carcinomatous affection of the spleen*, and the tumours were of that kind which have been termed *cephalomatous*. As they approached the surface of the spleen they had room to grow, and an opportunity to exhibit another of their characters, the forming in groups on the free surface of serous membranes. They did strangely and fatally group themselves together here, until the spleen was stretched out to the extent, and the mass had attained the enormous weight which Mr. Anderson describes.

As the tumours increased in size and number, they involved the kidney on that side, which was partially surrounded by and lost in them. The posterior portion of the kidney preserved its healthy appearance and structure; the anterior portion was enlarged, and had become carcinomatous; or rather, this change had taken place in the centre of the cortical matter, and the deposit or new formation had grown and spread on every side, and carried before it a layer or coat of healthy natural renal substance. This presented a very singular appearance; and this morbid change in the structure of the kidney well accounts for the flow of bloody urine, and the opinion of Messrs. Anderson and Rowland, that the disease originated in the kidneys.

It is singular that in no part of this enormous mass had the softening process commenced. There was not the smallest cyst or abscess wherever we cut, and that was through the greater part of the tumour. This would lead to the supposition (and the state of the portion of the spleen that was not involved would strengthen it) that, notwithstanding its bulk, it was but of recent growth.

The rapidity with which these cephalomatous tumours increase is almost incredible. Dr. Carswell, in his admirable history of "Scirrhus," in the Cyclopædia of Practical Medicine, gives a satisfactory illustration of this:—"The influence of pressure in favouring or retarding the development of carcinomatous tumours, and consequently of modifying their bulk, is most conspicuously seen when they are situated near the external surface of the body (or, we add, of any part of it). In carcinoma of the eye, a tumour which may have required several months before it reached the external surface of this organ, will, after it has been removed, together with the whole contents of the orbit, reappear, and, in the course of one or two weeks, acquire a much greater bulk than before the operation."

This horse first appeared to be ill in January; he was skilfully treated; his complaint seemed to leave him, although the groom then suspected the existence of tumour in the abdomen; he got into "tolerable good condition," and so continued until the 7th of May, when he discharged bloody urine: the kidney then probably began to be involved. We can hardly conceive of a horse being in "tolerable fair condition," and certainly not of his doing his ordinary work, with such a tumour within him. It must have been of recent and rapid growth.

Of the causes of these tumours, in our present state of veterinary knowledge, we can say little. There must have been a peculiar condition or disposition of the body previous to the formation of the tumour; but in what this disposition consisted, or what gave birth to it, we know nothing. With regard to the symptoms, we are as much in the dark; and, indeed, what can be said when Mr. Anderson confesses that neither he nor Mr. Rowland "suspected the existence of such a voluminous tumour." The naturally convex form of the spleen, and the accumulation of the tumours on its inner surface, may account for the existence of such a mass without any considerable increase of bulk, if which had existed, it would have been perceived; and the lancinating pains which are described in carcinoma of parts supplied by the nerves of sensation, would be scarcely suspected, and is rarely or never found in similar affections of parts fed only by the organic nerves. The little impairment of function in this case may be accounted for by the consideration, that the office of the spleen is yet undetermined, and that it has been removed without apparent injury to any function. Yet we should have expected some impairment of digestion—some loss of condition from the pressure of such a mass on the stomach and intestines, and some difficulty in breathing, from its interference with the action of the diaphragm*.

* M. Delafoy gives an account of a horse, which he had known for two years, that had never carried much flesh, but yet had been always gay, and had fed well, and worked well, and had shewn no indisposition until five days before his death. On the cæco-gastric portion of his colon a tumour was fixed that weighed 30lbs. Mr. Karkeek saw a mare that had been an excellent hack, and was often ridden long and fatiguing journeys, with ease to herself and pleasure to her rider, who died after an illness of a month, and in whose abdomen, surrounded by the small intestines, was a tumour that weighed 23lbs. The only enlargement, however, that we are aware of comparable to this, was that of a cow, that was in tolerable condition, and walked pretty well with the other cattle. The liver was much enlarged, and weighed, when removed from the abdomen, 137lbs. Of enlargement of the spleen in the horse there is but one on record which weighed 35lbs. Mr. Campbell says that he once saw the spleen of a bitch five times as large as that of a cow.

As to the medical treatment, we fear that Mr. Anderson says too truly, that if the existence of the tumour had been suspected, medicine would have been of little avail.

Dr. Carswell, the Professor of Morbid Anatomy at the University of London, who did us the favour to assist us in our examination of the tumour, said, that in his experience (and this has been his chosen study), it was a unique specimen; and that, generally speaking, in carcinoma of the spleen, that viscus in not materially enlarged. He has added a drawing of it to his already unrivalled collection of illustrations of the appearances and ravages of disease. Y.

ON CATARACT.

By Mr. JOSEPH CLAY, *V.S., Shrewsbury.*

I HAVE great pleasure in responding to the call of Mr. Percivall, and send you some of the cases on which my opinion of the formation of cataract in the eye of the horse, without previous inflammation, is founded.

By referring to your report of the trial at Shrewsbury, August 1832, you will find that I stated in evidence, that I had known cataract form without active inflammation, or without any previous apparent disease in the eye; and that I had detected small cataracts when the owner had not the slightest suspicion of any disease in the eye, and had denied that any previous inflammation had ever been observed; and also that I thought it not improbable that a small cataract, like the one in question, might form between the time that the horse was sold and that at which he was examined by Mr. Hickman.

CASE I.

A filly foal, the property of the Rev. Dr. Gardner, of Sansaw, had cataract in both eyes, without inflammation. This filly having run a nail into one of her fore feet when about a fortnight old, I was requested to see her. While waiting in the box for an assistant, I amused myself by looking at her eyes. There was not then the least appearance of cataract, or any other disease of the eye; but in nine or ten days after this I observed a cataract in the near eye, about the size of a small pin's head. My attention was then drawn to the off eye, but, after a most minute examination, I could not detect the slightest appearance of cataract in it; yet, about four or five days after this, when I again visited Sansaw, and, upon a second examination of the

off eye, a cataract was as visible as in the near eye. At the end of six weeks from the time I first saw her, these cataracts were of the size of a large pin's head.

This filly remained in the Doctor's possession until seven years old; and, up to five years old, the cataracts were much the same. I had not an opportunity of looking at her eyes from this time until she was got up for sale, at seven years old. I then examined them, and, to my astonishment, there was not the least appearance of cataract. She was sent to Rudgley fair, and sold to a London dealer, quite sound.

CASE II.

A Mr. S. Durston, of Stanwardine, a most respectable gentleman farmer, and well known as a fox-hunter in this county, had a black mare, of his own breeding, with cataracts in both eyes, of which he had not the slightest knowledge until a gentleman who came to buy her detected them. Mr. D. expressed himself much surprised, and said "A safer mare across a country could not be, as a hunter." I myself, and every sportsman in this country, can corroborate Mr. D.'s assertion. This being an extraordinary case, Mr. D. wished me to see her. The cataracts were then very visible. She is now in the possession of a Mr. Thomas Matthews, of Lea-Hall, another gentleman equally well known in our hunt, for whom I, about three months ago, fired her legs. The cataracts were much the same as when I first saw them, which is about four years ago.

CASE III.

A mare, the property of my father, and which I rode as a hack several years, had cataract without inflammation. After riding her two or three years, on her being led out of the stable one day, I noticed something unusual in one of her eyes, which, on examination, proved to be cataract, and must have been of very recent formation, as no one rode her except myself. This cataract never afterwards varied so long as she remained in my father's possession, which was many years, as hack and brood mare. It is scarcely worth my while to notice a letter which appeared in your publication a few months ago, signed "A Looker-on," which letter, I do not hesitate to say, is a tissue of falsehood from beginning to end. In proof of this, the horse then mentioned as perfectly cured by Mr. Crow, and worth £20, has recently been made away with as quite useless. The writer of that letter is too well known here to deserve further attention.

I shall always feel most happy to claim a page in your valuable

publication, when I meet with any thing I judge worth the attention of the profession; but I cannot condescend to make it the vehicle of personal slander and local jealousy, which is too general a feeling in this neighbourhood.

ON CATARACT.

By Mr. J. M. Hales, *V.S., Oswestry.*

Whether cataract forms in the eye of the horse without previous inflammation has become a prominent subject amongst the communications to The Veterinarian for the last four months. I hope that I shall be excused for making a few observations upon that topic, and this more especially, as the discussion has arisen out of the trial of Roberts *v.* Croft, which you know, Messrs. Editors, was reported by me, and as I was the first veterinarian in this district that publicly avowed that cataracts sometimes formed without previous inflammation, if not the first who entertained such an opinion. I have the pleasure to know the whole of the veterinary surgeons examined upon the trial alluded to, and consider them to be men of intelligence and knowledge in their profession, and that they stated their professional opinions in a very straightforward manner. I am upon terms of friendly intercourse with some of them; and although I then differed with them in opinion as to the occasional formation of cataract, I held and still hold them in high estimation. At the trial I had a subpœna from both parties, but was not called for either, as my opinion cut both ways. On the one hand, I could not consider that a horse with a hernia, no matter how small, could be sound; and this point was given up by Mr. Roberts' counsel, in consequence of his veterinary evidence being of a different opinion, excepting that of my townsman, Mr. Hammonds. On the other hand, I considered that whenever the cataract had formed, it had not been preceded by inflammation; and as there was no proof of its existence at the time of sale, there was nothing impossible in the supposition that it might have been produced in the twenty-five days that elapsed between the time of sale and the examination by Mr. Hickman; for I know that it was on the 18th of July that he saw the horse. The above trial took place at the Shrewsbury March assizes, 1832. Upon the 30th of the same month, the following letter appeared in the *Shrewsbury Chronicle* newspaper.

" *To the Editor of the Shrewsbury Chronicle.—Roberts* v. *Croft.*

' Who shall decide when doctors disagree ?'

" Sir,—On reading in your paper of last week the trial at the county assizes respecting the soundness of a horse, I was very much struck with the evidence given by Mr. Clay, inasmuch as I consider what he said contrary to general facts: I shall therefore be obliged by your insertion of a few observations which I had to make upon this evidence. He asserts ' that a cataract may be formed in a fortnight or three weeks,' and that he has known *many* instances where it had been formed even in less time. Now, the horse in dispute was sold on the 23d of June, and Mr. Hickman examined him on, he believes, the 4th of July, and *then* found he had a cataract in his eye; so that there would be, in this case, only about *ten days* for the cataract to be formed in, and which time Mr. Clay thinks it ' exceedingly probable' for it to be produced. It is well known, that in the production of cataracts *in the horse* several attacks of inflammation precede such formation, at intervals of a month or six weeks, or longer; and I believe I shall be borne out by veterinary surgeons generally, that no cases of cataracts (except through accidents) ever occur without being preceded by such attacks of inflammation; and that it is contrary to facts for a cataract to be formed so as to be visible in so short a time as what he asserts. Indeed, so regularly does this inflammation take place, that it has obtained the appellation of ' moon blindness,' in consequence of that luminary being supposed the cause of it, by affecting them periodically; but in this case there is not a word mentioned about inflammation existing whilst the horse was in Mr. Croft's stable, and I suppose there was none. Mr. Clay again asserts, ' that it does not require a severe inflammation to cause cataract;' but, on the contrary, says, ' that a very slight degree of inflammation will produce it;' and, to prove this, he further asserts ' that he has known the disease (cataract) formed without the keeper knowing any thing about it.' Here he has, in a manner, acknowledged that inflammation *does* take place; and I presume that, in this case, none (apparent) existed during the ten days; for it is *generally* the case, that when once a cataract has formed, the inflammation subsides, but not invariably so. Again, I believe there never yet was a case of cataract *in the horse,* but what inflammation was a forerunner to it, and this of no slight nature, and quite evident to any one of discernment; and I dare hazard an opinion, that this horse, either in Mr. Croft's possession, or in others,

has been subject to it; and I have very little doubt but the 'sponging' Mr. Croft speaks of, was for that complaint. It is also worthy of remark, that so fatal is this disease (specific ophthalmia) that veterinarians generally recommend their employers to dispose of them ere another attack comes on; for I believe, if the truth be told, few, if any, are ever cured, but always terminate in cataract. I am led to make these remarks, not from any vindictive motives, but merely for truth's sake; and I have no doubt but that your columns will be open for what any others may have to say in reply on this subject.

"I am, Sir, yours, &c.

"W. A. CARTWRIGHT.

"*Whitchurch, March* 26, 1832."

Not long after the publication of the above letter, Mr. Cartwright was kind enough to pay me a visit, when our conversation naturally reverted to the trial, his letter, and the subject of cataract generally, at which time I told him that I thought him wrong in publishing such a letter in a newspaper, and that I was convinced that small cataracts, like that in the eye of Mr. Croft's horse, frequently were not forerun by inflammation, and that he would find it so by attentive observation: the result has been the cases that Mr. Cartwright has published in THE VETERINARIAN.

I am one of the last men that would wish to detract from the professional reputation of Mr. Cartwright, and I am sure he will give me full credit for this assertion. I know him to be a very persevering man, to whom great merit is due; but cannot help thinking that, in common candour, he ought to have mentioned from whence it was that he was led to take the views of cataract that he has done, particularly as he has endeavoured to impress upon the readers of THE VETERINARIAN, that Mr. Clay was under an obligation to some one else for the opinion he gave upon the subject; for he concludes his paper in the January number with the following words—"especially as I am informed that such opinion (Mr. Clay's) did not originate with himself, or from his own experience, but from information derived from a neighbouring veterinarian." This sounds, to my ears, something like ill-nature; and as I have every reason to believe myself the person to whom Mr. C. alludes in this remark, I cannot, in justice to Mr. Clay, refrain from observing, that he is in no other way indebted to me in the matter in question, beyond friendly communication with a brother practitioner upon a subject that we, in great measure, entertained the same views of.

I have known Mr. Clay during the greater part of his and my own life, and consider him a very respectable man in and out of his profession. I have for some years been convinced of the fact that small cataracts are observed in the eye of the horse without their having been preceded by inflammation; and I have in my memory, at this moment, half a dozen cases that have so arisen. In several of them the owners of the horse were unconscious of the existence of any disease in the eye, and have assured me they had not the slightest suspicion that the eye was not perfectly good. Mr. Croft's case is precisely in point: he had no supposition that his horse had a cataract, or he would not have requested Mr. Hickman to make a general examination of him, after that gentleman had declared himself satisfied upon the point in dispute. I have had the pleasure to be acquainted with Mr. Croft for many years, and am very confident that he is incapable of making an unjust statement upon such a subject; and he has several times told me, both before and after the trial, that he bred the horse, and that he never, to the knowledge of himself or any servant about his house, had been known or supposed to have had an inflamed eye.

In these kinds of cataract there is no difference to be seen between the eye affected with the disease and an healthy one, except the appearance of the cataract; they are equally clear and lucid, which I believe is never the case when the eye has been once attacked with the "specific ophthalmia. The opacity is small and well defined, and I consider its seat to be in the capsule of the lens.

How or when these cataracts form I know but little of from my own experience, as the general answer to my inquiries upon this subject has been, either that they did not know of its existence, or that it had always been the same. In one instance a friend of mine asked me to look at a very favourite horse of his, as he had lately discerned a speck in one of his eyes. Upon examination I found a small cataract, and asked if he could give any account of its origin: he replied that he could not; that he had never known any thing the matter with the eye till he saw the speck, and was certain that it had not been there long, or he must have seen it; and I fully believe he would, for he was a person particularly attentive to his horse, and would have been aware of the slightest imperfection in him.

Mr. Percivall, Mr. Cartwright, and Mr. Harris state that they have known cases in which cataracts have been absorbed, after existing for a longer or shorter time. It has never fallen to my lot to see a case of this description; many, and, perhaps, the

greater part of these cases of small cataract, without previous inflammation, will remain stationary for years; but I never knew one to be absorbed.

Mr. Cartwright mentions Mr. Croft's horse, but does not speak from his own knowledge: he "*was informed,*" that his eyes were perfectly sound when Mr. Watson sold him. For twelve months after the discovery of the cataract, I had frequent opportunities of examining this horse, and during that time there was not the slightest alteration in the eye; the cataract was quite stationary, getting neither larger nor less: he was then sold, and I have never seen him since.

In Mr. Percivall's case, absorption must have gone on very rapidly; for it seems that the cataract was entirely gone in five days after it had been first detected by Mr. Percivall.

Two years ago I bought a horse from a friend, and having known the animal for a long time, and being satisfied that my friend would not deceive me, I made no examination of him at the time of purchase; but on the morning after he was delivered I found one eye inflamed, and upon looking into it saw what I considered to be cataract, about the size of a rather large pin's head. I made up my mind that I was done, and wrote to the gentleman on the subject; who, in reply, declared that he had never seen or known any thing the matter with the horse's eye, but would take him back if required to do so. Examining the eye very attentively the next day, I thought I could perceive a slight motion in the speck; and that it did not exactly keep the same precise situation.

I now began to waver in my opinion whether it was cataract, and resolved to keep the horse till I saw the result: in a few days the inflammation subsided, and in about a fortnight the opacity was gone. I had this horse in my possession for four months, during which time he never evinced the slightest further disease of the eye; I then parted with him, but have never heard any complaint of his eye since.

I consider the opaque spot, in this case, to have been a small portion of condensed coagulable lymph in the posterior chamber of the eye—the product of accidental inflammation. I am quite convinced that, had this horse been brought to me for casual examination, I should have pronounced him to have had a cataract; and had I not seen him again for some considerable time, and then found that the opacity was gone, I, no doubt, should have asserted that the cataract had been absorbed.

I have only seen one case of congenital cataract. Five years ago, a gentleman of this neighbourhood wished me to examine

the eyes of a foal a few days old, which was foaled blind: I found a perfect cataract in each eye. I stopped the gentleman's team, a week ago, as it was passing my door, in order to look at the eyes of this horse; the cataracts are both there, and he is, of course, totally blind.

Upon the question of soundness, as it relates to cataract, I should say with Mr. Spooner, that every horse with this defect, no matter how produced, or how small the opacity may be, is unsound. It is a disease that may render the sight defective, and perhaps end in blindness. Besides, we should have some fixed points to act upon; and I believe that our profession has had much odium thrown upon it from a temporizing way that veterinary surgeons have of giving their opinions upon soundness. I hate the expression, that a horse may or may not be sound with a particular disease, like Mr. Percivall's cracked decanter. If the probable tendency of any disease a horse may have, is to render the part affected with it incapable of performing its proper function, even at a remote period, I should consider it an unsoundness, although the animal may be perfectly capable of what is required of him at the time of sale, and there may be a tolerable chance that the defect may not come against him.

The knowledge, however, that some diseases will remain stationary, although they may not be remediable, is often of great importance to us in giving advice to purchasers, as, by weighing all the concurrent circumstances, we may frequently, with some confidence, advise our employer to purchase or not, although the horse cannot be warranted sound.

I am glad to find that the subject of cataract has brought out Mr. Apperley, the far-famed Nimrod; and am sure that every lover of the horse, or of sporting, will feel interested and delighted with productions from the pen of the author of the "Letters upon Summering the Hunter," &c. And as I am proud to find him amongst the readers of THE VETERINARIAN, perhaps he will be pleased to hear, that the mare he mentions in the April number of THE VETERINARIAN came into the possession of Mr. Niccolls, of Crumpnell, near this town, after the Halston sales. Mr. N. sold the foal (a colt), by Master Henry, at three years old, to a Liverpool gentleman, for a good sum; and I believe he has turned out a first-rate hunter.

ON TORSION OF THE ARTERIES,

FOR THE PURPOSE OF ARRESTING HEMORRHAGE IN VETERINARY OPERATIONS.

By Mr. YOUATT.

I HAVE since had another opportunity of putting the effect of torsion to the test.

A setter was brought to my infirmary with a considerable tumour, which occupied the whole of the inside of the hock-joint, was becoming pendulous, and had two small ulcers forming on it. It was extirpated. It was plentifully supplied with blood-vessels, principally from the anterior tibial; two considerable branches of which were divided. Four turns of each with the torsion forceps completely arrested the bleeding, and the application of the instrument seemed to give very trifling pain.

The bandages were not removed for four days, when the wound looked well, and is now nearly healed: I have, therefore, no doubt that torsion of the arteries will soon be established among us in all these operations.

My friend and pupil, Mr. Symonds, has ere this received the torsion forceps which he requested me to procure for him. I rejoice to hear that he will avail himself of the opportunities to which he alludes. I will venture to say that he cannot fail of success, and I am quite sure that his brethren will be much indebted to him.

THE VETERINARIAN, JULY 1, 1834.

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

ON THE EXTERNAL CAUSES OF DISEASE.

[AERIAL POISONS, VENTILATION, &c. &c. continued from p. 223.]

By Mr. W. F. KARKEEK, *V.S., Truro.*

FROM what has been stated, it must be readily allowed, that in a confined and ill-ventilated stable, where the air which its inmates are compelled to breathe is saturated with poison, that this subtle fluid must be attracted into the circulation along with the air, mix with the blood, derange its properties, and

affect its vital principle. Most persons are aware of the necessity of a due supply of air, but they are ignorant of the method of obtaining it in their stables. The door is oftentimes the only entrance for fresh air; others have windows, which are shut and opened at the pleasure of the groom. But the noxious vapours arising from an animal's body can be little affected by such means. Every animal has an atmosphere of its own, heated by the warmth of his body, which can only be dissipated by motion in the circumambient air. It is the stagnant atmosphere that is most to be dreaded. To the poor benumbed beast, exposed to an inclement wintry sky, who instinctively collects his limbs into an attitude as fixed as marble by the sheltered side of a hedge, lest, by their motion, he should dissipate the stratum of warmer air immediately surrounding his body, a stagnant atmosphere is desirable, not only by moderating the painful sensation of cold, but by preventing the dissipation of that degree of heat which is necessary for the preservation of the vital principle. But let circumstances be reversed, and instead of the miserable half-fed beast exposed to the severities of winter, let us picture to ourselves the horses on board of one of the transports, in the expedition to Quiberon; how grateful to their feelings would have been a current of fresh air. Circumstanced as they were placed, the sufferings of these poor animals must have been dreadful; the hatchways being closed down, they were almost suffocated. We have been informed, that they have been observed drawing their breath with all the laborious and anxious efforts for life which are seen in expiring animals, subjected by experiment in the exhausted receiver of an air-pump.

Mr. Coleman informs us, in his lectures, that the consequences of this were, that almost all of them disembarked either glandered or farcied; and the few that escaped these fatal diseases were affected with grease, mange, ophthalmia, &c. &c.

In long-continued calms, in which there is a stagnation of the air, and during which the heated and contaminated atmosphere is not replaced by fresh and purer air, fevers and diseases of various kinds are observed to be more prevalent than at any other time. For several weeks before the plague broke out in London in 1665, there was an uninterrupted calm, so that there was not sufficient motion in the air to turn a vane*.

* Since writing the above, we have had the pleasure of reading some observations of Dr. Prout, in his Bridgwater Treatise on the Effects of Foreign Bodies in the Atmosphere, which so strongly confirm what we have written on the subject, that we have been induced to transcribe them:—

"In the year 1782, and still more in the year following, a remarkable haze extended over the whole of Europe. Seen in mass, this haze was of

In many instances nature tempers the high degree of heat belonging to particular climates by the periodical recurrence of cooling winds at stated hours of the day; and the alternations of

a pale blue colour. It was thickest at noon, when the sun appeared through it of a red colour. Rain did not, in the least degree, affect it. This haze is said to have possessed drying properties, and to have occasionally yielded a strong and peculiar odour. It is also said to have deposited in some places a viscid liquid, of an acrid taste and of an unpleasant smell.

"The dispersion of this haze in 1783 was attended by severe thunder storms. As might be expected, the general state of health has, for the most part, been deranged during the continuation of these phenomena. Simultaneously, there have been epidemic diseases of various kinds. Thus, in the above-mentioned years, 1782 and 1783, an epidemic catarrh, or influenza, prevailed throughout Europe; affecting not only mankind, but likewise other animals."

This remark of the learned doctor coincides with those of our friend Mr. Youatt, in his lectures delivered at the University of London, who has given a very interesting account of the epidemic that prevailed among horses, in the year 1783, throughout all Europe*.

The nature of the matter thus diffused through the atmosphere is quite unknown. It may be as various at different times as the character of the epidemics to which it gives origin. "As an example of the extraordinary effects which foreign bodies, when diffused through the atmosphere, are capable of producing, we may mention," says Dr. Prout, "those produced by silenium when in combination with hydrogen, it is diffused as a gas through the air, even in the most minute quantity. The effects of this gaseous combination of silenium with hydrogen are thus described by the celebrated chemist Berzelius, its discoverer. 'In the first experiment which I made on the inhalation of the gas, I conceive that I let up into my nostrils a bubble of gas, about the size of a small pea: it deprived me so completely of the sense of smell, that I could apply a bottle of concentrated ammonia to my nose without perceiving any odour.' On another occasion, while preparing the gas, Berzelius felt at first a sharp sensation in his nose; his eyes then became red, and other symptoms of catarrh began to appear. In half an hour, he was seized with a dry and painful cough, which continued for a long time, and which was, at last, accompanied by an expectoration, having a taste entirely like that of the vapour from a boiling solution of corrosive sublimate. These symptoms were, at length, removed by the application of a blister to his chest."

Dr. Prout does not tell us that this gas is actually diffused through the atmosphere during the prevalence of epidemic disease; but as silenium, like sulphur, is a volcanic product, such a substance, being ejected from the crater of a volcano during an eruption, or through a crevice in the earth during an earthquake, may thus produce an epidemic disease. His intention is merely to shew, that a small quantity of an active ingredient, like silenium, is sufficient to contaminate the atmosphere over a wide extent of country.

"The matters," says the doctor, "occasionally diffused through the atmosphere, which appear to be in a *state of solution*, are not often perceptible by our senses, unless in some cases, perhaps, by the sense of smell." As an instance of the presence of such bodies in the atmosphere, he

* See THE VETERINARIAN, vol. vi.

what are called the sea and the land breeze, are of the highest importance to the comfort and health of the inhabitants. And though the hurricanes to which these regions are exposed are

mentions a very remarkable observation which occurred to him during the late prevalence of epidemic cholera:—On the 9th of February, 1832, the weight of the air suddenly appeared to rise above the usual standard. This continued for six weeks, and the increased weight of the air the doctor attributed to the diffusion of some gaseous body through the air of the city, considerably heavier than the air it displaced. When this phenomenon was first observed, the wind in London, which had previously been west, veered round to the east, and remained pretty steadily in that quarter till the end of the month. Now, precisely on the change of the wind, the first cases of epidemic cholera were reported in London; and from that time the disease continued to spread. The foreign body, therefore, that was diffused through the atmosphere of London, in February 1832, was probably a variety of malaria,—a subject which we now proceed to consider.

In districts partially covered with water, and having a luxuriant vegetation, such as marshes and fens, particularly in warm countries, or, in colder countries at seasons of the year when the sun is most powerful, noxious exhalations arise, whose nature differs, perhaps, in some degree according to the locality. Such exhalations have received the general name of malaria, and are well known to be the fertile source of various diseases, more or less, of the intermittent febrile type. In cold and in temperate climates, these diseases for the most part assume the character of regular ague, or of rheumatism; but on approaching to and within the tropics, they appear as the more formidable remittent and continued fevers, the well known scourges of hot climates.

With respect to the nature of these exhalations our knowledge is very imperfect. Evidently, they are in some way connected with vegetation not being in a state of growth, but with vegetation in a state of decay.

It has, therefore, been thought likely that these exhalations contain some gaseous body, composed chiefly of hydrogen and carbon. These effects may arise from a gaseous compound of this description, though no such compound is at present known; and the probability is, that malaria occasionally owes its properties to other elements, besides the hydrogen and carbon disengaged from decayed vegetables.

"With respect to foreign bodies in the atmosphere," says the doctor, "it remains to observe, that though of very opposite characters, they have yet this resemblance, that they all apparently exist less on their own account, than as being the inevitable results of general laws established for a higher purpose; and whatever appear to us anomalous or defective, may in reality be parts of some great cycle or series, too vast to be comprehended by the human mind, and only known to beings of a higher order, or to the Creator himself. So the desolation of the hurricane or of the thunder-storm, the settled affliction of malaria, and the march of the pestilence, are, in truth, but so many examples of the unsearchable ways of the Almighty. 'He sits on the whirlwind, and directs the storm;'—a hamlet is laid waste; a few individuals may perish, but the general result is good: the atmosphere is purified, and pestilence with all its train of evils disappear. Nay, however inscrutable the object of the deadly malaria itself, do we not see one end which it serves, namely, to stimulate the industry and reason of man? By his reason, man has been

most dreadful in their effects upon the property and even lives of the inhabitants, yet we may rest assured, on general principles of reasoning, that, in the main, they are beneficial. We, who are rarely oppressed for more than a few hours in a whole summer by such a state of the atmosphere as occasionally precedes a thunder-storm, when no friendly breeze interposes to remove the close and humid stratum of air which envelopes our bodies, how grateful to our feelings is the refreshing coolness which is experienced by the agitation of a storm! The plants give out more oxygen, and this in some measure accounts for the delightful and life-giving freshness of the air. Persons who have delicate lungs owe, in a great degree, the difficulty and oppression which they feel to the smallness of their apartments, a difficulty which decreases on going into a large room or into open air.

Whatever difference of purity may be attributed to the air of cities and of the country, the degree of agitation of the air has a most marked influence on the extent to which the chest dilates itself: the slightest agitation of the atmosphere, when its hygrometric state and temperature are adapted to the system, produces such a feeling of well-being, that the chest dilates in consequence, and admits a large proportion of air.

From the facts we have mentioned, we may safely infer that, in ventilating an apartment, we have only to imitate nature, to cause the motion in the air which will carry off the atmosphere heated by the warmth of the body.

To explain, in a more familiar manner, the circulation of the air, and why, in spite of the architect, in spite of the mistaken notion of grooms and stable-boys, who are over anxious in keeping out the air from a stable, by accurately stopping by list, hay, and horse-dung, all the smallest openings that admit fresh air, the following simple experiment will suffice. If the air of a room is *heated* by fire, whilst the air of a contiguous room is *cold,* then let the door between these two rooms be opened; in which case the *hot air* of one room will pass through the upper part of the opening of the door into the cold room: and, on the contrary, the *cold air* of the other room will pass into the former through the lower part of the opening. This may be proved by applying a candle at the top and lower parts of the opening between the two rooms. The direction of the flame of the candle will point out the contrary currents of air.

Unless this were the case, and unless the air was constantly renewed, stables, and even dwelling-houses, would be rendered

guided to an antidote beneficently adapted for his use, which has stript malaria of half its terrors. By his industry the marsh has been converted into fertile land, and disease has given place to salubrity."

completely mephitic or noxious in a few hours. And in churches and theatres, when a number of persons are assembled together, especially if the air circulates in them slowly, it would soon become vitiated.

It is to the principles of chemistry that we are indebted for the better ventilating of apartments; and had she stopped here, and merely explained the method in which the air is vitiated by respiration, and the manner in which those noxious vapours are to be dispelled, she would have bestowed on mankind an incomparable blessing. Modern science may be regarded as one vast miracle, whether we view it in relation to the Almighty Being by whom its objects and its laws are performed, or to the feeble intellect of man, by which its depths have been sounded and its mysteries explored.

The present Professor of the Veterinary College directed his attention to the ventilating of stables at a very early period of his professional career; and has, accordingly, ventilated the stables of the several cavalry regiments in Great Britain. The following system is the one that he has adopted and taught in his lectures at the College. We give it in his own words*.

"By ventilation," says the Professor, "is meant not any degree of temperature, either hot or cold, but a constant change of atmosphere, a constant supply of pure air. The common mode of ventilating stables was by means of windows, which were opened or closed at the pleasure and will of the groom. But the plan which I have adopted is to have openings made both at the top and the bottom of stables. Thus, in the formation of stables, the rack should be in the centre: two apertures about 2 inches by 3 inches, or 3 inches by 4 inches, should be made on each side, as close to *the horse's nostrils as possible*, and two holes of a similar size at the bottom. The holes at the bottom should be close to the pavement, because it is the purest air: the *heavier the air, the purer it is, and the better fit for respiration—the heavy air containing more oxygen than any other.* By this plan we have all the heavy air, which contains the most oxygen, coming into the room by the apertures near the pavement, and all the impure or rarefied air going out at the upper holes. The *upper holes being so near to the nostrils of the horse*, you might, *à priori*, suppose that the air would pass in, as well as pass out, through these apertures; but this is not the case."

The reader will perceive the mistake under which the worthy Professor has laboured for so long a time, as it regards the

* Lectures taken in short-hand notes, in the years 1823 and 1824, by the author.

gravity of the atmospherical gases. But, leaving that out of the question, we are disposed to disagree with him upon more important grounds. When holes of the description which he has recommended are placed so immediately opposite the horse's head, we are of opinion, whatever he may say to the contrary, that they are as likely to admit a current of cold air from without, as to assist in the withdrawing of the heated air from within; and we are well assured that a stream of cold air playing constantly on the head of a horse can be productive of no good. It was a generally received opinion at one time, that if a living body be suddenly exposed to cold when it is above the natural standard of heat, and especially if there be much perspiration, very great danger is to be apprehended. This is true only to a certain degree and in a particular manner: for instance, if the whole of the body be exposed at once, and completely, to an extraordinary degree of cold, no harm will happen; but if only a part of the body be thus exposed, we may expect a derangement of its functions in some shape or other.

"If the wind blows through a hole,
Make your will, and take care of your soul,"

says the Spanish proverb, and the saying is a very true one. Change from one extreme to the other ought always to be guarded against, and a uniform temperature should be preserved as much as possible in the stable. These are the Scylla and Charybdis, into which many persons have fallen; either keeping their horses in a constant chill by exposing them to currents of cold air; or, on the other hand, shutting out the least access to it, to prevent their "catching cold," as they commonly term it.

It is needless, we presume, to observe that the terms made use of to express varieties of temperature are merely relative, the limits between heat and cold constantly varying with the particular state of the body immediately previous to and at the time it is subjected to the impression. In general, however, below forty-five degrees is considered *cold*, above seventy *hot*, and the mean between the two, *temperate*.

The operation of *heat* upon the living system is universally stimulant; the operation of cold *(that is to say, the absence of heat)* is either tonic or sedative, according to the mode of its application; for the animal frame, like inanimate matter, is liable to have a portion of its heat abstracted from the external parts by the application of a colder medium: but its inherent powers of regeneration, when the impression of cold has been moderate and of short duration, quickly supply the portion withdrawn, and

the recent evolution of heat usually exceeds the previous abstraction; hence moderate degrees of cold, quickly applied, prove invigorating, by calling forth the action of the calorific powers; but, when it is either more intense, or applied for a longer time, the system becomes deprived of the due influence of that principle which before conduced to the support of its inherent heat, notwithstanding respiration continues to be performed as usual, and the ordinary quantity of air continues to be taken into the lungs. Its operation in this case is sedative or debilitating.

Whenever the whole or part of the body has been exposed to the sedative influence of cold for a long period, to a great extent, it proves destructive to life. When local or general in a less degree, it proves the predisposing cause to various diseases of the active kind, determined in their seat by the particular predisposition of the animal. In this case the injury is produced by the change from cold to heat. When heat suddenly succeeds to cold, the blood is powerfully determined to the surface; and the more intense the preceding cold, and the longer its continuance, the greater is the accumulation of irritability, and the more violent are the effects produced by sudden application of heat.

We have hitherto spoken of cold as the predisposing cause of inflammation; the sudden change of cold to heat is therefore properly considered as the most pernicious agent in producing catarrhal affections; whilst the change from heat to cold is not generally considered to be productive of much injury. We shall find, however, on examination, that the effect of currents of cold air is as pernicious as heated air. To enter largely into this subject would be foreign to the design of the present paper; the following concise explanation will, we hope, be amply sufficient to afford a general idea.

It has been observed that the action of cold upon the living system, when generally applied, unless it be extreme in degree, is not productive of any bad effects; for the animal frame, supported by its inherent heat, can bear a very considerable diminution of temperature without injury: and it therefore follows, that, if the succeeding change from cold to natural warmth were gradually and properly conducted, no injury could possibly happen. The popular opinion, that the mischief arising from change of temperature depends upon the sudden transition from great degrees of heat to cold, is one not altogether founded on error. Of this we are certain, that the greater the heat of the body, the more susceptible it is of the impression of cold; and when the application of cold is sudden, or when the body is immersed in water, the pores are strongly closed; a constriction takes place in the extreme vessels on the surface of the

body; the blood is propelled with increased momentum to the heart: and supposing the body to be now emerged, the reaction of the heart, sending back the blood to the surface, diffuses a genial warmth, and removes the stricture; but if the stricture continue, this effort of nature to relieve herself will terminate in general inflammation.

Such is the effect of sudden cold when its application is universal; but should the application be partial, what will then be the consequence? The effect already stated will be *partial.* Constriction will take place in the extreme vessels subjected to the access of cold, and the blood will be propelled with increased momentum into the adjoining vessels, where tension will prove a stimulus. Many examples of this might be given. In the case of catarrh arising from sleeping in cold damp sheets, the person, upon getting into bed, usually feels no very uncomfortable sensation of cold: he soon acquires the usual genial heat of the bed, and falls into the state of sleep; but in the morning awakes with a confused perception of disorder, which, in the course of the day, puts on a characteristic form. Here, then, is the application of cold and moisture producing disease without being accompanied or followed by external heat. Again; a reaper, reeking with sweat, lies down to sleep upon the grass: the injury is perceived before the cold has alternated with heat, although the subsequent application of heat, in proportion to its intensity, will increase the disease. As an external agent, heat is, without doubt, by far the most frequent exciting cause, and cold appears to be that which predisposes the oftenest; yet the application of cold, in the instance we have mentioned, has a directly exciting effect. On the whole, then, it appears, that when the change is gradual, nature, between wide extremes, can accommodate herself to her condition; but that when the change is partial, sudden, and continued, it generates disease.

But to return more immediately to our subject, which we fear is not sufficiently "dovetailed" to suit the tastes of the readers of THE VETERINARIAN. The plan we would recommend for the proper ventilating of a stable, is one that has for its object that of keeping up that degree of warmth which is requisite for the health of the animal, combined with a free circulation of atmospheric air.

The situation of a stable should be dry and elevated; a northern aspect is, perhaps, the most desirable. The height within should be, at least, twelve feet, and the walls of a sufficient substance to prevent, as effectually as possible, either the heat of summer or the cold in winter from affecting the temperature of the interior. The floors should be made either of large

flat, fluted paving stones, or brick, laid nearly level with a grating or drain in each stall to keep it dry, which must have an outlet from the stable that will readily and easily carry off the urine. The stalls should be large and roomy; and, if it is possible, the horse should be allowed to stand loose. Loose boxes are particularly desirable for the carriage horses and hacks of private families, which have little work or exercise, and stand much in the stable. The benefits which hunters derive from standing in loose boxes need not be mentioned here.

It is not our intention to enter farther into the minutiæ of stable management; we shall therefore conclude this part of the subject by recommending that *cleanliness* should prevail in every department. Cleanliness is as necessary as pure air to the health of domesticated animals; indeed, we cannot well have one without the other; for he who has a clean and well ventilated stable, will have a healthy stud, and the converse of this will never fail to engender disease. To obtain a full supply of pure air, two sets of apertures are necessary; one set in the upper part of the stable for the escape of the heated and impure air, and another set close to the floor, to admit the pure air. These latter openings should be so situated that the air, on entering, is not directed in a current, but diffused generally throughout the stable. The same rule should be observed in the structure of the upper vent holes; and seeing that the expired air always ascends in a direction perpendicular to the horizon, these apertures should be vertically placed. But when this situation cannot be obtained, we should endeavour to have them placed as near to the ceiling and as far from the nostrils of the animal as possible. The apertures should be made in an oblique direction, which will give a free vent to the current of heated air, and at the same time protect the stable from wet and wind.

But, owing to the peculiar construction and situation of some stables, it is almost impossible to have these openings above and below. Under such circumstances, in order to expel the heated and contaminated air, small tubes opening into the stable, either in or near the ceiling, should be carried to the top of the building, or be made to communicate with the external air by small perforations through the wall. And in order to admit the fresh air into the stable (when circumstances prevent the apertures being made near the pavement), other openings should be made in the ceilings, having communications with small pipes that should lead from thence, either to the outside of the wall of the stable, or to any other part of the building that might be judged more convenient, where they should be bent, and conducted downwards, till they reach the ground, where they should be left

open to communicate with the external air. By this plan, the cool external air would be forced in at the lower openings of the tubes, and made to ascend into the stable, in proportion to the quantity that escaped towards the higher regions, by means of the ventilator. We are aware that this plan is a complicated one; but when, by means of the situation of the stable, it is impossible to have direct openings below, or above, we think it a desirable one*. It has in one respect an advantage over the former one with those persons who require an extra degree of heat in the stable, and yet wish to get rid of the foul air; inasmuch as the air which is admitted from without will be so dispersed about the apartment, that it will supply the inmates with a sufficient quantity of fresh and vivifying air, without any of those inconveniences to which they might be subjected by the usual way of admitting it.

By either of the plans which we have mentioned we shall obtain a sufficient degree of warmth necessary to the health and well-being of the animal, combined with a free circulation of pure atmospheric air. From what has been stated, it must appear that we are no advocates for keeping horses hot, but only in a certain degree of warmth, that is as requisite to their well-being as to ourselves.

Throughout the great diversity of climates, from the burning sands of Africa to the frozen regions of the north, it is observed that all-provident nature, with a view to the preservation of animal life and health, has carefully accommodated the constitutions of animals to the temperature to which they are destined to be exposed. The horse thrives best in temperate climes, for either in extreme hot or cold countries he degenerates. Climate, in its most extensive sense comprehending atmosphere and soil, has had almost unbounded influence on the characters of animals. The activity, irritability, and sensibility, usually observed in horses possessing much "blood," are never found in those of the huge heavy draught kind. These qualities are the natural production of a warm climate, a gentle elevation of soil, and a serene and equal atmosphere. The same effect is produced in man as among the inferior animals.

Now let us briefly consider the external signs by which we are capable of ascertaining that *men and horses* are in that condition, which will enable them to do the greatest possible degree of work with the least possible degree of fatigue. It is not from the sleek countenance, nor from the plump habit, as indicating distended vessels, that we are to form

* Probably some of the readers of THE VETERINARIAN will favour us with plans for the ventilation of stables under such circumstances.

our judgment of the strength of the former; for Hippocrates has well observed, "*otium humectat et corpus reddit debile; labor siccat et corpus robustum efficit.*" To see, therefore, vigour in perfection, we must look at the well-trained wrestler, or pugilist, whose turgid muscles, as in the statue of the Farnesian Hercules, can be readily distinguished through the skin. Nor is it in the plump carcass and fat-sided horse that we estimate his racing powers, and capability of enduring fatigue, but in his smooth silky skin, firm flesh, and prominent muscles; the former condition being weak and powerless, whilst the latter is equal to greater exertion of power and speed combined than any other animal which the hand of nature has formed.

Then a horse out of condition, and a horse in condition, are two different things—"*in personâ*" the same, but "*in re*" quite another kind of being. But what means, then, must we employ to get horses into "condition?" Condition is the work of time, and can only be acquired by slow degrees. Diet is one of the principal means, exercise is another; but neither of these will answer, unless accompanied by a *certain degree of temperature.* "The essential agent is *heat*, either generated by warm clothing, or conveyed by natural or artificial temperature*." Without the agency of *heat* it is absolutely impossible to make horses look well in their coats; and this, as we said before, is one of the external signs by which we judge of their condition.

It is, we believe, commonly supposed that horses possessing short silky coats are more liable to suffer from the vicissitudes of the atmosphere of our climate than those with long ones. The severe changes in the weather are, it is true, the most unhappy circumstances attending the situation of domesticated animals. Our atmosphere is, perhaps, more variable in point of temperature than that of any other country; but in our opinion, and we speak advisedly, horses possessing short silky coats are better able to brave the inclemencies of a wintry sky than any other. Nimrod, in his work on the "Condition of Hunters," makes this pertinent remark on the subject. It coincides exactly with the view we have taken. "It is quite a mistaken notion," he says, "that a horse with a long coat on his back is less liable to catch cold than one that has a short one; the latter is closer to him, is warmer, and is much sooner dry. A long hollow coat the wind blows up, and exposes the skin; but what is worse still, it is many hours before it is dry after a sweat or rain, during which time it must contain all the chilling properties of wet clothes."

* Percivall on the hair.

The writer thus practically alludes to a fact which we have already endeavoured to impress on the minds of our readers:—that against the influence of noxious agents the living body is endowed with a power of resistance, which affords it complete security as long as its vital energies continue vigorous; but when these decline, the very causes which before made no impression upon it, now prove fatal. Hence, the weaker the body, the more susceptible it is of the influence of physical agents, and the less it is capable of resisting the influence of those that are noxious.

Air, *moisture*, and *heat*, are the principal agents which a living system has to contend with, and it is found capable of resisting them in proportion to the degree of vitality which it possesses. When the vital energies fail, putrefaction ensues, and it is soon resolved into the ultimate elements of which it was first formed. By this process, the stately oak and the bramble, the creeping insect and proud and imperious man, pass back to their original and primeval elements. Thus, to put an animal into "good condition," is to increase the preserving powers, which, as it were, preside over its economy, repel the attack of injury, and guard it from the dangers with which it is incessantly surrounded. This leads us to another part of our subject, viz. *food*.

We have now considered in succession a number of the properties of the atmosphere; and its contemplation as a machine (if it may be so called) is well suited to impress upon our minds the strongest conviction of the most refined, far-seeing, and far-ruling contrivance. It seems impossible to suppose that its various properties were bestowed other than by a beneficent and intelligent Being—able and willing to diffuse organization, life, health, and enjoyment, through all parts of the world.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

Hippopathology:—*A systematic Treatise on the Disorders and Lamenesses of the Horse. By* William Percivall, *M.R.C.S., Veterinary Surgeon in the First Life Guards, Co-editor of "The Veterinarian," and Author of "The Anatomy of the Horse."* Longman and Co. 10*s.* 6*d.*

It is one of the taxes which we have to pay for our supposed editorial privileges and advantages, that we are, in a manner, forbidden to refer to or quote from our own works—that would

be egotism—or to speak in terms which the heart and the judgment would prompt of the labours and the merits of each other; for much of it would be ascribed by all our readers to the partiality which long connexion and mutual esteem and identity of feeling and opinion on various points have naturally engendered; and there are those, who, from the perversion of their own minds, would conjure up another and a worse motive.

Mr. Percivall's new work on the horse could not, however, as a mere matter of form, pass unnoticed; it is too much identified with the improvement and the honour of our profession; and we were making up our minds to forget for a little while that which will even mingle with our most pleasant and choicest reminiscences, and assume the character of the cold, unhumanized critic, when we were relieved from all our embarrassment by seeing the subject taken up by one, than whom, out of our profession, we know not any more competent,—a highly gifted practical horseman, a friend to us and our craft—the author of "Nimrod's Letters on the Condition of Hunters."

We copy from the "New Sporting Magazine" Mr. Apperley's Review of the first volume of the "Hippopathology." It embodies our sentiments, and faithfully pourtrays the characteristic excellencies of the work.

Y.

"It is a well known, although, all things considered, rather a singular fact, that the country in which I now reside (France) is the parent of veterinary science; but the truth is, the proud stomachs of Englishmen of a respectable class in life were a long time before they could digest the stigma that was supposed to attach to the inferior offices of the *farrier*. Indeed, we are told in the preface to Mr. Joseph Goodwin's valuable treatise on shoeing horses, that Professor Coleman himself thought we could only look to the sons of grooms and farriers for practical veterinarians. Neither can this be wondered at; for if there be one class of beings whose practice and general conduct assimilated them to brute beasts, it is that which was composed of the illiterate horse doctors of olden times. But a strange alteration has taken place in this department of our rural economy. The empiric, who trusted to mere practice and the credulity of the public for the establishment of his undeserved reputation, is now become a rara avis in the land, and, when the few that remain shall have run the course allotted to them, the breed will be extinct. We shall hear no more of the hereditary possession of recipes and talent which these worthies were renowned for, people having at length found out, that even practice not founded on the basis of theory, is little worth. On the

other hand, whoever looks into the monthly Veterinarian Journal —to say nothing of the valuable works which have issued from the press on this interesting science—will be convinced, that the prediction of the Professor is not only not verified, but that men of education and respectability are to be found amongst the members of the veterinary profession, to which the honourable footing they have been placed on in the British army has very mainly contributed. But I am running away from my subject —a notice of Mr. Percivall's book.

"The Elementary Lectures (three volumes octavo) of Mr. Percivall, published about eight years back, are a standard work in the profession, and may truly be considered an ornament to it. There we find not only the *lucidus ordo*, the *copia verborum*, most happily combined, but the man of science, the practitioner, the scholar, and the gentleman, are equally apparent throughout. "*Morborum quoque te causas et signa docebo*," is his motto, and closely has he stuck to his text. It may be naturally expected, then, that from the terms in which I have now spoken of, and the use I have previously made of this elaborate work in my own writings, my notice was attracted to the advertisement on the cover of your last number, announcing the appearance of another work from this gentleman's pen, entitled *Hippopathology*, and that in a few days afterwards it was in my hands. I like the title of this work, inasmuch as it implies imparting to us that knowledge of medicine which relates to the distempers incident to the horse, together with the distinguishing characteristics by which they are denominated, and subsequently the treatment by which they are relieved. I was at first disappointed at finding only one volume, treating on the *external* disorders of the body; but learning from the preface that two more are to follow—one comprehending the *internal* diseases, and another to be devoted entirely to *lamenesses*, my disappointment ceased, and you shall hear the why and the wherefore. I have a very slight personal knowledge of Mr. Percivall; in fact, we should, I think, pass unnoticed by each other in the streets. But my accquaintance with him upon paper is an intimate and a cherished one; and I am quite sure, that a mind so highly cultivated as his is, will receive with allowance the suggestion of one so infinitely his inferior in the theory of the subject on which he ventures to offer them, as I consider myself, and as I must be considered by all men. As however he has, in the volume before me, done me the honour to quote me in several places—as a practical writer, of course—and to comment upon what I have asserted, I am the more emboldened in this appeal of his ingenuous superiority.

"It is only lately that sportsmen have troubled themselves to

inquire into the causes of disease in the animal which they prize so highly, leaving the effects, when they become apparent, to the care of their groom, or, perhaps, what was worse, to the generally murderous practice of the first ignorant farrier they could procure. A great change, however, in these matters has taken place. A spirit of inquiry has diffused itself widely amongst sportsmen within the last dozen or fifteen years, and they now appear as desirous to peruse a work of real and useful information relating to the horse as formerly they were careful to avoid it. The present volume, then, cannot fail being interesting to them, inasmuch as the object of the author is to trace disease to its grand first cause—its very "parent" indeed, as he calls it—*domestication ;* and subsequently to sift or unravel that cause, *by inquiries wherein the principal changes consist,* which the animal undergoes in passing from his native fields into the stable, and from a life of comparative inaction to one of severe exertion. He then enters upon a full and scientific history of that heavy curse on the stable, *inflammation*—the very essence of almost all diseases, and without a thorough knowledge of which, he shews, none of them can be thoroughly understood. His section on this head is most ably written, and his remarks on the altered structure—by ossification especially—to which the horse is so prone, together with his just and rational observations on fever, plethora, bleeding, physic, and external injuries, are most interesting and instructive even to the general reader, but doubly so to the sportsman. Another good property appertains to this volume. We have 330 closely-written pages for 10s. 6d. which must put to shame the imposing charges at which one or two comparatively valueless sporting works have lately been sent forth to the public.

"Now then for my *say*. It is merely this :—Not many persons unconnected with the profession, would (as I did twice) wade through three volumes of elementary science, even if as much attached to the animal in question as I myself am. The objection naturally enough raised against works of this kind by the generality of reading sportsmen is, the unavoidable recurrence of technical, and too often unintelligible, terms, although they may admit the necessity of them in illustration of the subjects treated upon. "*Damnant quod non intelligunt,*" is an old proverb ; and, no doubt, Mr. Percivall is of my opinion here ; for the volume before me is quite free from what is contemptuously termed "the jargon of science," and perfectly comprehensible by the most uninitiated understanding. In fact, it is nothing more than a plain statement of cause and effect, in very impressive but very convincing language, and in the true spirit of natural philosophy."

Veterinary Jurisprudence.

CATARACT.

Explanation of the discordant Evidence in the Case, Palmer *v.* Greville.

By Mr. Kent, *V.S., Bristol.*

Observing, in the No. of The Veterinarian for the present month, your report (as copied from the *Times*) of the horse cause, tried at Taunton, "Palmer *v.* Greville," with a query annexed; and being the veterinary surgeon who, among the plaintiff's witnesses, swore that the mare's eyes were good, and still remained good, I will shew my readiness to respond to that query by a narration of the course of proceedings, and how I acted my part in those proceedings.

I believe it was sometime in July of 1833 that Mr. Palmer sold a mare to Mr. Greville for the sum of £18, with a warranty of soundness—the money to be paid in a few days after; but in the mean time Mr. Greville, fancying the mare to be unsound in respect of her eyes, refused payment, consequently legal means were resorted to by Mr. Palmer to obtain the amount. In the autumn the mare was sent by Mr. Greville to the horse bazaar, Bristol, with a request that Mr. Leigh would examine her eyes as to soundness; and the result was, that Mr. Leigh gave a certificate of unsoundness, stating that there was a speck or cataract in the off or right eye, and the mare was sold, in dispute, for £10. Shortly after, the purchaser, in the company of an employer of mine, called on me, and asked me to examine the mare's eyes, with a view to decide a trifling wager, in which it was agreed that my decision should be received as a proof. They never hinted to me that the mare was in dispute. I examined the eyes very particularly, and pronounced them to be sound. Some weeks afterwards I was told by the parties who brought the mare to me that she was in dispute, and that I should probably be called to Taunton as a witness in the cause. A few days subsequently I met with Mr. Leigh, and named the circumstance to him, when I found that he had examined the mare's eyes, and had pronounced her unsound from disease existing in them.

From this time I saw nothing and heard but little of the mare, until the Thursday previous to the trial, when, for the first time, I was applied to by the plantiff and his attorney, to ascertain what my opinion was, and the grounds on which that opinion

rested. On the Sunday following I met the defendant's attorney, who informed me that Mr. Leigh and his partner, both veterinary surgeons, had examined her on the intermediate Friday, and that Mr. Leigh still said she was unsound in the off eye, and observed that he thought I had better re-examine her.

On the Tuesday morning following, the mare was brought to Bristol for my re-examination, when I saw her and Mr. Bradford the plaintiff's attorney. The result of my re-examination was a repetition of my former declaration, that the eyes were in perfect health and free from speck of any kind, and from any indication of previous disease: on this I was immediately subpœnaed as a witness on the trial.

From this time, as a matter of course, I felt so far interested in the cause as to wish proper steps to be taken to prove the soundness of the eyes; and with that view I urged on the plaintiff's attorney the almost paramount necessity of taking the mare to Taunton to be her own witness, as I was the only veterinary surgeon for the plaintiff, and had reason to believe there would be two on the other side, whose evidence would be diametrically opposed to mine; and accordingly the mare was taken, to be ready at the door of the court at the time of trial.

On her arrival at Taunton, an effort was made by the defendant, or the person who acted for him, to have her eyes examined by Mr. Barrett, a veterinary surgeon of that place; but I had requested Mr. Bradford not to allow him to examine the eyes so long as he could communicate with the other medical witness for defendant previous to giving evidence; and accordingly he was not allowed to see them.

On my appearance in the witness box, I again stated in evidence that the mare's eyes were in the most perfect health, and perfectly free from speck or blemish of any kind; when Mr. Sergeant Bompas, the leading counsel for the defendant, told the judge, that as sure as Mr. Leigh was called as a witness in a horse cause, so sure was I to be called as a witness to oppose his evidence; that, with a view to obtain a right decision, his client had used every means to obtain an examination of the mare's eyes by Mr. Barrett, but that it was obstinately refused: on which Mr. Sergeant Wilde told the Judge that the mare was at the door of the court, brought there for the express purpose of being her own witness; and that, if his Lordship would order her into court, she should immediately appear. The Judge then directed me to leave the box, and accompany Mr. Barrett to examine her eyes; and that if Mr. Barrett imagined that he saw any speck, he must point it out to me. We proceeded together for that purpose; and when Mr. Barrett

had satisfied himself, he stated to me that he had examined the eyes with sufficient care to be able to speak positively respecting them. That the off or right eye was perfectly sound, and free from speck; but that there was a speck on the transparent cornea of the near or left eye. He pointed me to the part; and with the eye before us, I told him that there was neither speck nor disease existing in the cornea. On returning into court I was again placed in the witness-box, and examined by the Judge, to whom I related what had transpired between me and Mr. Barrett, and again stated, that the eyes were perfectly free from speck in them or on them; that there was not the slightest indication of their ever having suffered from disease, nor any thing which could lead to a suspicion that they were likely to become diseased.

Mr. Leigh, on being placed in the witness-box, stated in evidence, that he had examined the mare at the time she was sold in dispute, and on the Friday previous to the trial. That there was a speck on the capsule of the lens of the right or off eye at the time of each examination; but that it was smaller on the last examination than on the first; that it was very difficult to be perceived, and that no one but a veterinary surgeon could perceive it; that he could not positively determine whether it obstructed vision or not; and that the near or left eye was perfectly free from any speck, either on the lens or on the cornea.

Mr. Barrett stated in evidence what he had before said to me,—that the right or off eye was perfectly free from speck, but that there was a speck on the transparent cornea of the near or left eye, accompanied with an appearance that indicated predisposition to disease.

The Judge told the Jury that at one time it was his intention to direct them to examine the eyes themselves; but that Mr. Leigh had quite precluded that, by stating that no one but a veterinary surgeon could perceive the speck; that the defendant had had what they, the Jury, must have seen was very much desired, viz. the examination and evidence of Mr. Barrett, who corroborated the evidence of Mr. Kent, and not only stated that he could not see the speck in the off eye, although a veterinary surgeon, but said positively that there was no speck in it. His Lordship said, it was true that Mr. Barrett imagined that he saw a speck, but that it was on the cornea of the near or left eye. And opposed to that also was the evidence not only of Mr. Kent, who said that there was no speck on either, but of Mr. Leigh, who said that there was no speck on that eye. The result, as might be expected, was a verdict for the plaintiff.

The above is an accurate statement, not of the identical words

used, but of the substance of what passed, without any colouring or holding back or adding to, of any thing which could, in any degree, affect the situation of the witnesses, or the character of their evidence.

I offered, before the verdict was given, to have the mare killed, and the eyes dissected in the presence of persons qualified to decide; and if speck or cataract could be demonstrated, to pay the value of the mare. And subsequently I made the same offer to the defendant's attorney, his own brother, and to hold myself bound to do so at any time within a week. He intimated that the offer should be accepted, but never applied to me to make good my engagement.

We insert this "Report" with much pleasure, and with many thanks. The spirit of truth and candour which it exhibits is creditable to the writer. It affords *a very singular*, but a not unimportant illustration of the subject which has lately occupied many pages of our periodical, and shews us that we have much yet to learn respecting the diseases of the eye of the horse, and *the method of ascertaining the actual existence of these diseases*.—EDIT.

HILLIARD *v.* ORBELL.

Mr. Steer opened the pleadings.

Mr. Platt stated the case. This was an action on the warranty of a horse sold by the defendant to the plaintiff, who is a surgeon, residing in Clapham-road, for £42, payable by a bill, for which an action was subsequently brought against the plaintiff, who now sought to recover the costs incurred by that action, together with the difference between what he sold the horse for, viz. £18, and the sum which he paid for him; his whole demand being £75.

Benjamin Simpson.—I happened to be walking with the plaintiff in May 1833, when the defendant met us, and said to the plaintiff, "I have got a horse that will suit you. There is nothing the matter with him, but he whistles a little bit in the gallop." We went with him to the stables, and I went to take up one of the horse's legs, when the defendant said, "You have no occasion to look at him, for I warrant him sound, barring his wind." The plaintiff bought him for £42, and gave his bill for that amount, payable in three months. About three days afterwards I saw the horse, when he was so lame that he could not

lay his foot on the ground. He was a whistler, and made more noise than a band of music.

John Connor took the horse to a farrier the day after he was brought home to the plaintiff. He was very lame. The plaintiff offered the defendant £10 if he took back the horse; but the defendant said he would take him back at no price: the horse was afterwards sold for £18.

Turner, a farrier, deposed that there was a splint and a contraction in one of the horse's legs.

Mr. Earle addressed the Jury for the defendant, observing that he should shew that the horse was sold without a warranty.

William Sewel was present at the bargain for the horse, when the defendant said he would not warrant him; as he was a whistler he would sell him as he was. "When the bill which the plaintiff gave became due, I took it to him for payment. He said he had no money; and at my request he gave another bill, payable in two months. I did not hear him complain of the horse until afterwards."

Mr. Baron Parke told the Jury, that the question was, whether there was a warranty except as to the wind of the horse. If they thought there was, the plaintiff was entitled to a verdict. When a horse was sold with a warranty, he became the property of the buyer, who might retain him, and bring an action against the seller for the difference between that horse, if unsound, and a sound horse; but the usual way, when the buyer discovered the horse to be unsound, was to send him to a livery stable, and give notice to the seller, or send him back to the seller. It was material for their consideration, that, when the first bill became due, the plaintiff renewed it without making any objection as to the unsoundness of the horse. The inference which his Lordship would draw from this was, that he did not consider he had any claim on the defendant on the ground of warranty.

The Jury having deliberated for two hours, returned a verdict for the plaintiff—Damages £24.

The Times, June 12th, 1834.

We insert the above report, partly because it contains some useful information as to the course to be pursued in these supposed breaches of warranty; but more as a specimen of the wretched manner in which these horse causes are reported. It so happens, that this "Turner, a farrier," was our truly excellent friend, Mr. James Turner, of Regent Street; and that he said not a word about "contraction in one of the horse's legs;" and

that he did say something of importance which bore directly upon both of the points in question.

There cannot be more valuable and instructive records than these horse-causes well reported. We have offered our metropolitan friends to attend, and report them as well as we can, at least to report them honestly. We have entreated them to give us information of the time when any causes in which they are subpœnaed as witnesses are expected to come on. They have not vouchsafed to do so; and they must not be surprised or offended at the strange newspaper stories which we may occasionally, and most unwillingly, be compelled to copy.

Y.

Extracts.

On Providing Schools for the Instruction of Farmers' Sons in the Physical Sciences.

By Mr. William Hawkins, *Hitchin, Hertfordshire.*

An excellent paper, bearing this title, appeared in the last number of the Quarterly Journal of Agriculture. We subjoin some copious extracts from it, for the author shall speak for himself, and we will not weaken the effect of his argument. But, *mutatis mutandis*, how much of his reasoning applies as forcibly to us as to the farmer's son! How painfully does every day's experience force upon us the lamentable idea, that our education is not that which is calculated to fit us for the discharge of our duty!

The object of Mr. Hawkins is as noble a one as has lately been brought under the consideration of the public; and although one of the "sciences" which he would teach the farmer's son is the "diseases of cattle," we do not imagine that this ought to excite any jealousy in the veterinary surgeon, or would in the slightest degree be injurious to his interests. Our enemies are ignorance, prejudice, and jealousy. The men by whom we are looked on with an evil eye are those who cannot think, and will not learn—the herdsman, the shepherd, the cow-leech, and the farrier of the lowest grade. If the farmer employs us not beyond the treatment of the horse, it is because, ignorant himself of the maladies of his cattle—their nature, their causes,—or thinking that they are matters of the simplest kind, or which are doomed by a sort of fatality to run their destined course—he has no idea of the assistance which we could render him. Give him some notion of the structure of his quadruped dependants;

the influence of air and food, and a thousand external causes upon them—the complicated nature of their diseases—the difficulties respecting the simplest of them, and which long observation and experience can alone give to the owner or the surgeon the power of successfully combatting, and he will be our patron, our friend. He who knows most of the horse is most anxious and most thankful for our advice; it is he only who knows nothing about the matter who thinks that he can do without us.

Then we have no fear or jealousy about the dissemination of this kind of knowledge,—at least, if we are well instructed ourselves we have not; our chief fear would be the exposure of our own ignorance. We can, therefore, truly say, that we wish Mr. Hawkins all the success he merits, and that we should be most proud to contribute our humble aid towards the accomplishment of his purpose.

Y.

It is the object of this paper to recommend the establishment of schools throughout the kingdom, for teaching farmers' sons the elements of the sciences; such, for example, as Chemistry, Vegetable Physiology, and Mechanics. And, in the progress of it, I shall endeavour to shew, first, the usefulness of such knowledge, and then the method by which it may be generally diffused; and I think I can make out both these points to the satisfaction of any body who will take the trouble of attending.

To prove the importance of agriculture to a community, seems very like demonstrating the advantage of having food to eat and clothes to wear. That it is indeed "the first and greatest concern of every nation, and the foundation of its prosperity in every other matter," is a truth so universally acknowledged, that it has obtained almost the currency of a proverb. But in spite of this general recognition of its supremacy, a due proportion of human ingenuity has never been directed towards the investigation of its principles. The mechanical arts have been carried to a high degree of perfection by the labour and genius of such men as Watt and Arkwright, and in every town we see rising round us institutions for the education of mechanics. But what, of a similar nature, is being done for agriculture? We may look in vain for the institutions which should diffuse among practical farmers even that knowledge which already exists. The principles of agriculture may have been explored by the genius of Davy, and its practice reformed by the labours of Young, but discoveries and experiments can be useful only as far as they are known. Mr. Tennant has shewn how the farmers in the neighbourhood of Doncaster might have told that there was magnesia amongst their limestone, and that consequently it would be

injurious to the soil; that is to say, he knew these things himself; but of what use were his experiments to the Doncaster farmers, who never heard of them, nor perhaps of him either? It is said that vaccination was known in a district in Gloucestershire before the time of Jenner, but how did that avail those who were dying of the smallpox in London? The barrenness of the hills in Westmorland will be remedied when, not the chemists and the vegetable physiologists of London or Paris, but the tenants and occupiers of those very hills shall understand its causes and its cure. At present the means of diffusing scientific knowledge amongst them are extremely limited, and the general establishment of agricultural schools would have for its object the conveyance of knowledge to the place where it is wanted, in a manner perfectly analogous to the ingenious contrivances by which water is conveyed from the reservoir at Islington to the houses of the inhabitants of London.

But, it shall be asked, shall chemists and recluse philosophers presume to teach farmers how to farm? is it not to be supposed, that men who have passed their whole lives in that pursuit understand it better than any body else? Most unquestionably they do. Sir Humphrey Davy would, most likely, have made a bad farmer. There are a thousand important considerations connected with farming, of which he was probably ignorant; but still he ascertained, in a manner clearer than had been done before, the principles which regulate the application of quick-lime as a manure. And it does so happen, that many of our useful discoveries have been owing to men not connected in practice with the art to which their discoveries were applicable. Arkwright was a barber, Dollond was a silk-weaver. The compass, the chronometer, and the weather-glass, three of the greatest helps to navigation, were all discovered by landsmen. Gunpowder is supposed to have been first found out by a monk.

Amongst the many helps towards a more perfect knowledge of external nature which the mind of man has discovered in these latter days, the first place is due, by general consent, to

Chemistry.—The efforts of the farmer are chiefly directed towards making land more fertile; and the first step in this process is to inquire in what particulars less fertile land may differ from that which is more so; to compare the two together; to find out the ingredients of each, and the proportions in which they are mixed. The knowledge how to do this is Chemistry. Arguments upon particular cases are commonly more intelligible than abstract reasoning; and it may therefore be advisable to select an instance. The following is from Sir Humphrey Davy's Agricultural Chemistry.

He says, "A soil of good apparent texture from Lincolnshire was put into my hands by Sir Joseph Banks, as remarkable for sterility. On examining it, I found that it contained sulphate of iron, and I offered the obvious remedy of top-dressing with lime, which converts the sulphate into a manure."

Now, what is the process by which, as we may suppose, Sir Humphrey Davy arrived at the knowledge that the difference between this barren soil and other soils of the same appearance, consisted in its containing sulphate of iron. By previous instruction, he had made himself acquainted with the nature of soils in general, and with their most usual ingredients, and he proceeded to test for them, one after another, until he threw in the reagent, which forced the latent mischief to shew itself.

What can be easier to observe, whether an infusion of any kind turns vegetable blues red or not? But if it does, the infusion contains an acid, and therefore lime, or any alkaline substance, is a good dressing for it.

When a piece of paper, moistened with muriatic acid, and held over the steam arising from a dunghill, gives out dense fumes, it is a certain proof that the decomposition is going too far, for it indicates that volatile alkali is disengaged.

It requires very little labour to observe, whether a soil effervesces by the action of an acid, or whether it burns when heated, or what weight is lost by heat; and yet these simple indications may convey most valuable information concerning the ingredients of the soil.

If the whole case rested upon these instances, there wou d be little room to fear refutation; for they surely prove the applicability of chemistry to agriculture—they prove that many of the causes of sterility, and consequently the appropriate remedies, may be discovered by its aid.

Entomology—the Knowledge of Insects.—The first step in proof of the utility of this science might be to shew that insects do a great deal of harm; but I shall probably be allowed to take that for granted. The destruction of the turnip-crop alone is a very serious national evil. Slugs, grubs, and wireworms eat the seed in the ground, and other creeping things in the granary. Flies torment the domestic animals whilst alive, and blow their flesh when dead. Caterpillars eat cabbages; and moths riddle holes in cloth. Almost every plant has its insect enemy. Clover-seed is destroyed by a small weevil (*Apion flavi-femoratum*); Dutch clover by the *Apion flavipes;* peas in the pod by the small beetle (*Bruchus granarius*). The wireworm is the grub of the beetle (*Elater Segetis*). The turnip-fly is properly a beetle, a little jumping beetle (*Haltica nemorum*).

The problem, of course, is, how to destroy this legion of ene-

mies. Now, to do this with the greatest effect, we must watch them through all their changes. There may, probably, be many persons ignorant that most insects pass through four stages of existence (of which the silk-worm affords a familiar instance); 1*st*, the egg; 2*dly*, the caterpillar; 3*dly*. the chrysalis; and, 4*thly*, the butterfly or imago. It is in the second stage that insects generally do the most mischief. In the egg and the chrysalis they do none; and in the imago, some do, and some do not. Though we are all familiar with the insect in the shape in which its ravages compel our attention, we are frequently unconscious of its identity under other shapes. Though our last year's crop was destroyed by the wireworm, we should probably pass by a swarm of the parent beetle, the Elater Segetis, without being aware of the relationship; and in the same manner we look on the cockchafer, without suspecting that its issue is the grub which eats the roots of the grass.

The follies committed for want of a little knowledge of entomology are well illustrated by Messrs. Kirby and Spence:—"In Germany, the gardeners and country people with great industry gather whole basketsful of the destructive cabbage-moth (*Noctua Brassicæ*), and then bury them, which is just as if they should endeavour to kill a crab by covering it with water—for many of them being full grown, and ready to pass into their next state, which they do under ground; instead of destroying them by this manœuvre, their appearing again the following year in greater numbers is actually facilitated. Yet this plan, applied to our common cabbage-caterpillar, which does not go under ground, would succeed."

The process of destroying noxious insects by attacking them in their early stages is not new in this country. P. Musgrave collected the chrysalids in the spring, so as to become acquainted with them, and then employed people to catch and kill the moths and butterflies. If you catch 200 in a day, you destroy 10,000 eggs, which would give 120,000 in a fortnight. Might not boys and girls be well employed in doing this? They have all the organ of destructiveness.

In short, it is abundantly evident, that if we knew them in all their changes, and know where they are concealed in autumn, winter, and spring, we might exterminate those multitudes which are now as the sands which are upon the sea shore. And if not all the knowledge required be yet in our possession, a great deal is, and might be easily imparted to the young farmer, if we could catch *him* in his chrysalis state; and what little is still wanting would soon be accumulated, when we had set so many keen and interested eyes to observe: a fly could scarcely move but they would be watching him.

The Diseases of Cattle.—This is an important subject. There is no individual of many years' experience in farming who has not suffered severe losses from the death of horses, cows, or sheep. Diseases amongst sheep are, perhaps, the most common and the most extensive; and to whom is the cure of them entrusted? Generally to a labouring man, who has not the remotest knowledge of the several organs which compose the animal frame, or of their functions, and whose education has not fitted him to reason correctly upon the few facts which he knows. What should we think of entrusting our friends or relations in sickness to a man who had studied no more of anatomy or medicine than a shepherd? And the mischief is not confined to their ignorance of the true remedy. Ignorant men are the most irreclaimable theorists; they attribute disorders to the most fanciful cause, and then, from their assumed and absurd premises, they argue away to a conclusion as hardily as a geometrician. I have heard many striking instances of this from a friend of mine, who is himself both a physician and a philosopher. One poor patient laid the blame of his sufferings upon a cause which few would have thought of. "Sir," says he, "*it is the wind meeting the disgester;*" and no doubt his remedy would have been, to have put some covering round the disgester to keep the wind away. Another poor fellow was troubled with "*a rising of the lights;*" and being asked whether he had taken any thing for it. "Yes," he said, "*he had swallowed some shot to keep them down.* And I beg to assure the incredulous, that this is an extremely common disease and remedy in this neighhood. If you send for a farrier, the message not unfrequently is, that he cannot come to see the horse to-night, but that he has sent him a drink, and will come and see him in the morning. Now, try this system by the same test: How would you like it yourself? You are suddenly attacked with a violent complaint, and you send for Sir H. Halford. He never saw you, perhaps, in his life, and knows nothing whatever about what is the matter with you; but he sends his compliments, and desires you to take a dose of Daffy's Elixir: and if your complaint be what is very common with horses, viz. inflammation of some of the viscera, this dose will probably finish you, as out of all doubt it has finished many an unfortunate quadruped. Not that the absence of the farrier signifies much; he probably does not know a bit the less of the disease on that account. The study of horse medicine and surgery has, no doubt, made much greater progress than that of cows or sheep; and some of its professors are men of sense and education, as I am personally able to testify; but how few are they compared to those of an opposite character. It was said, with much point and truth, by an old physician,

that in all cases of illness there were three things to consider,—the patient, the disease, and the doctor; and that if any two of them pulled well together, they would be able to beat the third. In the case I have been supposing, it is the disease and the doctor against the patient.

Cows, again, stuff themselves with cabbage, or other succulent food, which by-and-by ferments, and gives out a great deal of carbonic acid gas; the stomach becomes distended, and, if relief be not speedily afforded, the animal dies. Many a valuable creature has perished in this way, whose life might have been saved, if the owner had been chemist enough to know what would stop the fermentation, or had been provided with mechanical instruments for drawing off the gas. And these attacks are sudden; remedies to be useful must be near. There is no time to fetch the doctor, even supposing him to be worth fetching. The owner himself must know what to do, and how to do it. It is not proposed to make every farmer an accomplished surgeon; that would be impossible; but it is not impossible, and it would not be useless, to teach him at school something of the structure and diseases of the animals on whose health his fortune depends; something of the symptoms by which those diseases are indicated, and something of the operation of the most important medicines. Being so constantly slaughtered for domestic purposes, there would never be wanting opportunities of studying their organization, The national gain, by diffusion of this sort of knowledge, would be immense. According to Mr. Colquhoun's estimate, there were in the United Kingdom, so long ago as 1812,—

1,800,000 horses.
10,000,000 horned cattle.
42,000,000 sheep and lambs.

There are no tables published of sickness and mortality amongst quadrupeds; but out of 53,000,000, the deaths occasioned by disease in the course of a year must amount to an enormous total. In Holland, above 500,000 cattle are known to have died of disease within twenty years. At £10 a-piece, this would come to £250,000 a-year. The tenth part of one year's loss, upon this article of cows alone, would be enough to put into operation, throughout the whole kingdom, schools which would create ten times as much wealth annually as was ever lost by the death of cows. If money laid out in diffusing knowledge produced a return of only one hundred-fold, it would be certainly an eligible investment; but a hundred-fold would be little compared with its eventual products.

It has already been hinted, that the instruction here proposed

could be given only at schools. Grown men scarcely ever have resolution enough to carry them through the fatigue of studying fresh sciences. Either distinct schools might be established, or the existing schools might be modified. An intelligent farmer, who is already in the habit of taking pupils, might be provided with a scientific tutor. In the morning the boys might employ themselves, as they do now, in personally observing and assisting in the affairs of the farm; and in the evening they would receive from their tutor instruction in chemistry, botany, the structure and diseases of cattle, the knowledge of insects, and of the weather, natural philosophy, and book-keeping. I suppose a couple of years well employed would be sufficient to give a young man a competent knowledge of these matters. A difficulty might present itself, in the first instance, in finding tutors properly qualified; but that would be at the beginning only, for the pupils of this year would be the tutors of the next; and so a perpetual succession would be provided. People are shy of new things; but a father, in choosing a school for his son, would naturally say (if the charge was not increased), Whether these things be of any use or not, we shall get them for nothing; the boys will receive the usual instruction *and this besides*, be it worth little or much; and, therefore, by all means let us have it.

TO CORRESPONDENTS.

B.—There is no "Veterinary Botany." We have long been thinking of making some arrangements, in order to supply this important desideratum. Mr. Morton, in his Pharmaceutical Lectures at the Veterinary College, gives, we understand, a pleasing outline of that which undoubtedly should form a part of the student's education.

We have received the *Polypus*, and return Mr. — many thanks. *It could not have been extracted.* If he will furnish us with a more detailed account of the symptoms, we will take up the subject.

The course of "Studens" and his companions is plain enough. Let them remonstrate respectfully, but firmly. Such operations ought not to be performed in secret. It is a flagrant breach of faith between the instructor and his pupils.

Should that not succeed, let him furnish us with a statement of the grievance, sanctioned (to us) by his name, and he shall find that he does us justice when he terms our periodical "the student's friend."

If "A member of the Veterinary College" will send us some of his balls, we promise to put them fairly to the test, and not on such subjects, and in such a way as "the very pretty grey mare that stood in the farthest glandered box, and was killed by repeated doses of prussic acid—most barbarously." We will also send a portion of them to the quarter to which he alludes: but really we cannot insert a long list of cases, when we do not *certainly* know our correspondent (we suspect, however, that he is no great stranger to us) nor the medicine he uses. Why does he not come forward at once in *propriâ personâ? He* "would not be laughed at." We shall, at all events, hold him to his conditional promise, he may depend upon it.

The Letter of Lieut. James shall appear.

THE

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MR. YOUATT'S VETERINARY LECTURES,

DELIVERED AT THE UNIVERSITY OF LONDON.

LECTURE XLII (continued).

The Eleventh or Spinal Accessory Nerve, and the Twelfth or Phrenic Nerve.

THERE is another nerve, not intermingling with the glosso-pharyngeus or the cerebro-visceral, which, within the cranium, is included in the same sheath with the latter, and passes with it through the foramen lacerum. The origin of this nerve is very singular. As low down as the fifth cervical nerve we observe some minute threads: they are smaller than the fibriculi which go to form any of the other spinal motor nerves; and they arise evidently from the centre of the lateral column. They unite and they make a larger thread, which takes a direction up the neck. It passes between the motor and sensitive roots of the nerves above it—lying under, or penetrating through the ligamentum denticulatum; and as it climbs, it is augmented by fresh threads. It arrives at the foramen magnum—it enters it—it continues to climb until it has reached the ninth and tenth nerves, and then it turns round and escapes again from the cranium, as I have described, through the same foramen with them. It has scarcely quitted the cranium when it separates from these nerves, and, after that, its own trunk divides. Although separated from the sheath of the cerebro-visceral, it sends a branch to unite with the main trunk of that nerve, and also with the glosso-pharyngeus; it sends many branches to blend with the guttural plexus, and thus to form an anastomosis with all the neighbouring nerves: a large and main branch, proceeding anteriorly, reaches the sterno-maxillaris, and afterwards buries and loses itself in that muscle; another large division winds round the transverse process of the atlas, proceeds between the levator humeri and the splenius, and, becoming superficial, reaches so far as the top of the shoulder,

and then ramifies on the rhomboideus brevis, and vanishes in the substance of that muscle.

An organic Motor Nerve.—The minute fibriculi from which it rises would create a suspicion that it is a motor nerve: the muscles on which it expends itself prove that it is so; and the lateral column whence it springs would indicate that it is employed in the performance of some organic function. The muscles to which it is directed are voluntary muscles; they are concerned in the motions of the head, the neck, and the fore extremities; they are supplied with nerves from the spinal chord, and which excite them to sufficiently powerful action for the purposes which they are to accomplish. They are voluntary muscles; but they are also concerned, some of them at all times, and that involuntarily and unconsciously, in assisting in the function of respiration, and, when the breathing is hurried, they are all called into action consciously, yet, in a great measure, involuntarily. This is plainly a respiratory nerve: it is concerned with the function of respiration alone, but respiration is one of the organic functions. I class it with the others as *an organic motor nerve.*

The Twelfth or Phrenic Nerve.—We now leave the cranium and the spinal chord, and, observing the numerous ramifications and anastomoses of the cervical nerves, we find a very small one from the fifth (fourth) which takes its course down the neck, seemingly unconnected with any other nerve: we follow it, and it is joined by a branch from the sixth (fifth) cervical, and these, united, pursue the course which the first little filament had taken; and, by-and-by, these are associated with a branch from the seventh (according to the common nomenclature, the sixth) cervical nerve; and I have met with a filament from the lowest cervical nerve. The nerve thus formed, pursues its singular and solitary course down the remainder of the neck, and penetrates into the thorax, above the root of the axillary artery; it enters the mediastinum, and proceeds on, attached to the outer side of the pericardium, a beautiful object to the young anatomist and even the experienced one; and it continues its lonely path until it reaches the diaphragm, which is its ultimate destination. It penetrates the pleura—its branches beautifully radiate for some distance over the diaphragm, and are then lost in the substance of that muscle. One branch, however, goes on from the right nerve,—the ramus anastomoticus—and contributes to form the semilunar ganglion.

An organic Motor Nerve.—This is evidently an organic nerve, for it supplies the muscle mainly concerned in respiration. In its natural or relaxed state, the diaphragm bellies into the thorax.

It is stimulated by nervous influence derived from the phrenic nerve, and it contracts. In the act of contraction it is flattened, and the cavity of the thorax is enlarged, and the air rushes in through the nostrils and mouth, and the act of *inspiration* is performed. The nervous influence is then withdrawn, and the muscle relaxes, and once more bellies into the thorax; and the cavity is diminished and the air is expelled, or, in other words, the act of *expiration* is performed. There are other auxiliaries of which I have spoken when treating of the function of respiration, but this is the main agent. The division of the phrenic nerve will not at once suspend respiration, for that will be carried on, painfully and laboriously, by the other muscles, which assist in raising and depressing the ribs; but, by degrees, they and the animal generally will be exhausted by their unaccustomed and violent action, and death will ensue. If the spinal chord is divided above the origin of the phrenic nerve, respiration immediately ceases, for all the nerves concerned in the dilatation and contraction of the chest are cut off. The cerebro-visceral may continue to influence the glottis and the lungs, but that will be of little service when the parietes of the chest are fixed.

Whether a pure Organic Nerve.—It has been taken for granted by physiologists generally that the phrenic nerve is one of voluntary motion, and that the diaphragm is under the control of the will. In its usual action, the phrenic is a pure organic nerve, and uninfluenced by the will. The function of respiration,—the arterialization of the blood,—is necessary to the animal from the moment of his birth; it is identified with the continuance of life; and the continued contraction and relaxation of the diaphragm, the main agent in the discharge of this function, is co-existent with the commencement of life, *and ceases only when the vital principle is extinct.* In its natural action, then, it is perfectly independent of the will. But is not the diaphragm occasionally a voluntary muscle? Can we not increase or suspend its action when and how we please? Indirectly we can: we can call in other muscles to the aid of the diaphragm; we can give to them a certain velocity and power of action, with which the diaphragm from its relative situation must correspond. We can more fully and rapidly than usual expand the chest by the action of the intercostals, and also by that of the spinal accessory; we can rapidly and violently contract it by the power of the abdominal muscles, or we can give fixidity to the chest; we can excite that kind of opposed or antagonist action between the muscles of inspiration and expiration, which the power of the diaphragm shall be insufficient to destroy, and between which it is in a manner paralyzed. We simplify the matter by considering the phrenic nerve as one of

involuntary action,—*a pure organic one;*—and a diligent observation of the mechanism of respiration will render it highly probable that it is so.

Difficulty as to its Origin.—How, then, shall we account for its origin as a *true spinal nerve,* curiously made up of fibrils from different nerves, but all to be traced to the columns of animal sensation and voluntary motion? This is a difficulty which no anatomical fact will enable me to surmount; and to relieve myself from it, I am obliged to have recourse to that which is unphilosophical, and rarely, indeed, admissible,—the supposition of that which I cannot prove, that when, from a better process of maceration or hardening, we are able to unravel the complicated fibres of the spinal chord, it may hereafter appear that certain portions of the fifth, the sixth, and the seventh cervical nerves are derived from the lateral column, or that which is connected with the functions of organic life. Until then we must rest content with the undeniable fact, that the phrenic nerve is, in the ordinary distribution of its influence, a purely organic one; and the strong inclination of my belief is, that it is only indirectly that it can be ever brought under the power of the will. It acted before a volition could be formed; it continues to act when the mind is passive; and it is only by opposing a superior power, and by the combination of many a muscle, that the will has any control over it. There are stages, and states, and modifications of the respiratory function, which are necessarily to a great degree subjected to the influence of the will. If I were to select alone the faculty which every animal possesses of communicating his ideas, or expressing the pleasure or the pain which he feels through the medium of the voice, I should have a sufficient illustration of the association of voluntary power with the organic principle, in a way which neither the function of circulation or digestion, and, in fact, which no other function can require. Hence arises the difficulty; but a difficulty which is resolved by the observation, that the discharge of the function, so far as it is essential to life, depends on the organic principle; and that the intervention of the will is permitted only when our occasional "comfort or accommodation" requires it. But, gentlemen, I am here again theorizing somewhat too much. We have one more nerve, and that a most important one, to describe; and then neither you nor I shall be sorry to return to that which ought to be the main object of our anatomical and physiological researches, and which gives them their highest, and, comparatively speaking, their only value,—a consideration of the nature and treatment of disease.

THE CROCHLES IN CATTLE.

By Mr. J. TAIT PORTSOY, *N.B.*

"No man was ever so completely skilled in the conduct of life, as not to receive new information from age and experience."

MESSRS. EDITORS,

I NOW beg to hand you an account of a disease which is very prevalent in this country; and if it prevails in England, I, as well as a great many more of your readers in this quarter, would be glad to know what remediable measures are there adopted for its removal.

During the course of my practice here, I have directed much of my attention to this disease, generally termed, among the country people, "Crochles." It appears to me to be dependent on the state of improvement to which the lands may be brought, and the facility given to the water to run off; as in those lands where there is much uncultivated ground, and where, from a paucity of drains, the water is allowed to remain on the surface and form a marsh, this disease is much more prevalent, and in many cases proves fatal. I am the more inclined to ascribe the disease to this as a primary cause, as in other soils, *not* of a retentive bottom, and where drainage has been attended to, the disease has never appeared, except in its very mildest form. The cattle in the upper parts of the parishes of Fordyce, Ordiquhill, and Grange, are particularly subject to this disease in its most malignant form. These lands are marshy in the highest degree, and intersected by large patches of moss, when the water is allowed to become stagnant, or, if that is carried off, it is, in many cases, only conveyed from the moss to a plot of cultivated ground, thereby extending rather than checking the tendency to disease among their cattle, by supplying them with very bad grass. I have observed that cows generally become affected with this disease in the spring, or a few months previously to calving. They do not appear to be the only animals subject to its attacks.—About two years ago, at Cullen-House, I saw one of Lord Seafield's red deer labouring under a very severe attack of it. On examining him, I found a good deal of œdematous swelling existing about the limbs; the joints much enlarged; the gait of the animal at the same time proving that the whole body was similarly affected. It was pitiable to see one of the "fleetest of the forest" so completely overcome as to be unable to move from the place on which he stood. I advised that he should be removed to a change of pasture. This had the desired effect, and in a few months he was in all his pristine glory. About twelve

months ago, I happened to see a cow lying near a farmer's house, quite unable to rise: she had been ill of the disease for three months, and, notwithstanding the specifics which the doctoress in attendance prescribed, they had no effect in alleviating the sufferings of the poor animal, and at last she (the doctoress) took her leave

"With sighs and sorrow,
Despairing of *her* fee to-morrow."

A person passing at the time, who occupies a large orchard at the sea side, bought her for the price of her skin, as the owner thought she would never recover. The animal was conveyed in a cart, and safely lodged in the orchard, where there was a quantity of fine natural grass,—thus reversing the old adage, by being removed from "the heather to the clover," and she gradually improved, and soon became quite well. The last time I saw the person, he stated to me that he would not part with her for as many pounds as he had paid shillings. I have invariably found this to be the best mode of treating the disease. Indeed, if attended to at first, there is every chance of the animal's complete recovery.

The symptoms of this disease, when observed at first, are pains in the feet, particularly in the fore feet, and enlargement of the small joints of the limbs. The animal becomes hide-bound, and the hind quarters so weak and contracted as to prevent her from standing, and in almost every case to deprive her of the power of progression. In this, the most severe kind of "crochles," I have seen the animal lying on a small plot of ground, and fed with a little grass or a few cabbage-leaves, till completely worn out with lying in one posture, without the power of change, and all over bruised, she has even refused to swallow any thing but meal and water. Death now closes the scene, and presents to the view a most pitiable object, with contracted limbs and almost fleshless bones. I have often thought anxiously of something which might tend to alleviate the sufferings of the animal, if not to check the progress of the disease; but I am sorry to say, that no local or general application has as yet produced any good effect. In the first stage of the disease I have observed blood-letting, and the administering of laxative medicine, to be of some service in arresting its progress for a little while; but when the animal was not removed to other pasture, the disease generally returned with double severity.

Empirics abound with their specifics for this as well as almost every other disease, and to whom the ignorance and credulity of the lower orders of our peasantry present a wide field for imposition. A singular case of this fell under my own observation,

which I shall relate in the words of my informant. "Soon after commencing practice in this district, I was particularly struck with the appearance of a cow belonging to a cottar. On inquiring into the cause of the animal's apparent helplessness, my informant stated to me, "that she had the crochles, but was now in the way of getting better, a man having pared out the worm that was the cause of the awful complaint." On examining the cow, I found the muscles shrunk, the skin clinging to the bones, the joints enlarged, and about three inches sawn from each claw of her feet, and evidently suffering much pain. I endeavoured to impress upon him the impropriety of allowing any ignorant person to impose upon him to such a degree, and mutilate an animal so valuable to him; but was told in reply, that he was sure the man "knew the very spot where the worm lodged," and that he appeared to have great experience, *having travelled much as a beggar*. For this wonderful operation, the very modest charge of half a crown *only* was made. I ultimately prevailed on this individual to get her removed to a farm which the disease had never visited. From such a step the most beneficial change resulted. The animal, in the course of a short time, began to move about, and would have become perfectly sound, had not the *beggar* removed a part of the bones of the feet along with the *worm*. A removal, therefore, from the farm where such a disease prevails cannot be too strongly inculcated upon every farmer, as it appears to be the only mode of treatment which is productive of decided good. On a *post-mortem* examination of cattle labouring under this disease, I have invariably found the cartilages of the joints either ulcerated or nearly destroyed by the continual friction of the bones, in consequence of a diminished secretion of synovia. All the internal organs are generally in a healthy condition.

DIABETES IN A MARE.

By Mr. Goodworth, *V.S., Driffield.*

A MARE was bred by Mr. Atkinson, of the Cross Keys Inn, Driffield. When a foal, she had an unquenchable inclination for drink: the mother's milk was never sufficient for her, and she had an additional supply from the house. The mare was occasionally worked, and the foal was then left shut up at home; but if the stable-door was opened, she would, if possible, be out, and walk into the house for her supply of milk, which was always given to her by Mrs. Atkinson. When Mrs. A. was not in the way, and the foal was disappointed, she would

go to the hog-tub, and drink wash. At the end of autumn, she was taken from the mare, and put into the straw-yard; there she had what water she chose to drink, but no notice was taken of her constitutional thirst. In the summer she was turned out to grass in a field well supplied with water. It was now that her owner first suspected she was not right; for whenever he was in the field, and stayed a short time, she was sure to drink freely. He thought it a singular thing, and particularly watched her; yet, on account of her healthy appearance, he never sought medical advice. She went on in this way until she was four years old, when she was taken into a loose box previous to breaking, and then the inconvenience of the disease was principally felt. She voided urine in such abundance, as to completely saturate the straw, and make the stable very uncomfortable. Her proprietor was, in consequence of this, determined to part with her, and he sold her to a dealer; but she was soon returned. He afterwards exchanged her with a neighbouring farmer, and it was there that I first met with her. She was then six years old, very lean, but well shaped, and with such fine action, that I was induced to speculate about her.

Before I commenced any medical treatment, I attended a few days to her diet: I gave in succession three pails full of water, and she drank the last as eagerly as the first. In about ten minutes she began to stale: the urine was as transparent and clear as the water she had drunk. After a short time, I gave her as much water as she would drink, and exercised her directly afterwards; but water appeared to have no effect on the intestines, with regard to purging.

I now gave her five drachms of aloes in solution, which operated very well. I allowed her only three pails full of water in the day; but that appeared to be too small a quantity, and she would not eat sufficient of either hay or corn. The bowels became constipated, and I repeated the dose of aloes: it purged sufficiently, but left the mare debilitated. A few days afterwards she began to cough, and there was a soreness in the upper part of the trachea, and then came on a discharge from the nostrils, which was quickly followed by ulceration of the Schneiderian membrane, and symptoms of confirmed glanders: I then put an end to her existence. Since she had been in my possession, and I had had her two months, she could not have caught the disease from infection, and I believe it was generated in the system.

Post mortem examination.—I opened the chest, and found the lungs in a bad state: there were tubercles and vomicæ in abundance, more than I thought could have been there, considering

the short time the disease had developed itself; but its progress had been very rapid. In the abdomen, the stomach appeared healthy, but the liver was diseased: there was a sac resembling a gall-bladder full of bile. The kidneys appeared healthy, but larger than I had ever seen them. The emulgent arteries and veins were larger than usual, and so were the ureters, and also the bladder; yet there was no apparent disease in them. The womb was healthy, but the ovaries were indurated.

ON OBSTRUCTION AND INFLAMMATION OF THE MANYPLUS.

By Mr. JAMES HORSBURGH, *V.S. Arniston, N.B.*

HAVING for about three years been a reader of THE VETERINARIAN, and having derived much useful information from its pages, I have often thought of sending you some remarks on diseases that have come under my observation; but I have been deterred by the fear of not being duly qualified for the task, and that my contributions would not be so well taken as if they emanated from a more scientific practitioner. I have only to boast of the appellation of farrier, and (though I always try to do my best) like many of my neighbours, I am sometimes successful, and sometimes fail. Having attended Mr. Dick's lectures some years ago, and having now passed my first year as a regular student, I have at length summoned sufficient courage to offer you the following remarks on the diseases of cattle.

First, I would speak of *inflammation of the stomachs*, and particularly *of the manyplus*, or rather, what I consider *obstruction in the stomachs, producing inflammation*. The symptoms are well pointed out by Mr. Friend, in the number for April 1833, p. 201, and in which he says, that the cure is sometimes perfectly effected by powerfully evacuating the stomach and intestines. This is certainly the case; for in most instances, when early and full evacuation has been obtained, a cure has been the consequence; but if otherwise, the disease has been fatal. I have always considered the obstinate constipation to be the cause, and not the effect of the inflammation generally found on a post-mortem examination. This, I suppose, is contrary to the opinion of the greater number of better informed practitioners, whose theory is, that inflammation produces that obstruction. I have also reason to suppose that the treatment of the cow, after calving, is (in most cases that I have seen) the primary cause. I do not remember to have seen a case before calving, or where the cow was left nearly in a state of nature.

The treatment of the cow after calving is generally, in this part of the country, confided to the mistress of the house, or, under her directions, to the oldest of the servants, ignorant, stupid, and superstitious: the result is not to be wondered at. As soon as she gets the poor animal *trailed* into the world, it must be dragged by the heels along the pavement to put its blood in circulation; an egg, shell and all, is crammed down its throat, along with a little of its mother's dung, to give it the cud, and it is then taken away. The cow is next attended to. A handful of salt is thrown over her back to keep away the witches; and "the puir beast maun hae a sheef o' beer (barley) an' a drink o' meal an' water, to fill her up;" and perhaps she is visited every half hour, instead of being left quiet; and at every visit something extra is given. The consequence is, that the additional quantity of grain and other kinds of food, added to the predisposing causes of disease connected with calving, &c., brings about constipation, inflammation, and fever, and which generally occur from one to three weeks after parturition. I have always thought that this mode of treatment is the frequent cause of the disease, of two fatal cases of which, that occurred in my practice, I send you an account:—

Two fine cows, belonging to Mr. Wilson, of Moorfoot, were taken ill in the beginning of April, and died. I did not see them, but was informed of their symptoms, and that the many-plus in both was as hard as a stone.

May 15*th*.—Two other cows were taken ill. An old Highland beggar, pretending to be a cow-doctor, happened to be there, and prescribed the following, as the cows had symptoms of *red-water*: "A hare-skin pounded sma', an' a tankard (two quarts) fu' o' saut (salt)." Mr. W. thought proper to give her, in addition to this, a quart of olive oil. I was sent for next day; the cow was better; but whether the doctor's prescription or Mr. W.'s oil had wrought the charm, I could not say. My opinion was, that she had not been seriously ill at all.

The other was really bad. When I was sent for, she had got her *saut* the night before, but not the *hare-skin*. I bled her to the amount of six quarts, gave a pound of Epsom salts, ordered clysters every three hours, and a bottle of linseed oil at the end of six hours.

Next day, pulse 70, respiration 32. I gave croton oil, 30 drops in gruel, followed by half a pound of Epsom salts. I also ordered linseed oil 1 pint, and aloes in sol. ℥i; and half a pound of Epsom salts, alternately with the former every eight hours, or until active purging commenced.

18*th*.—Symptoms rather worse; pulse 78, respiration 30:

V. S. 4 quarts. Croton oil 30 drops in gruel, and the other purging medicines alternately every eight hours. I blistered the sides.

20*th*.—Worse; pulse 84, respiration 28, laborious groaning. Continued giving croton oil and smaller quantities of the purging medicines. She remained in nearly the same state; but the pulse rather getting higher, three days afterwards I sent more medicine, as Mr. W. was very anxious to obtain a passage through her, if possible, and sometimes exceeded my instructions.

Purging began on the tenth day, after which they gave her, without my orders, one pound of Epsom salts and a bottle of castor oil, to clear her out at once: the consequence was, that two days afterwards, when I saw her, she was rapidly sinking from superpurgation. I gave opium ʒi in gruel, made of flour and sweet milk, and left opium ʒij to be given at twice, at intervals of four hours, if the purging continued. She died on the sixteenth day.

I did not see her, but I was informed that the first two stomachs were soft, and not inflamed; that there were some hard parts in the under portion of the manyplus; but that the passage from them to the fourth stomach was clear. This was a case in which more purging medicine was given than I ever knew to any animal in so short a time; but as there seemed to be no hope until the bowels were opened, it was given between hope and despair. The whole quantity amounted to three bottles of linseed oil, six pounds of Epsom salts, three ounces of aloes, and about 150 drops of croton oil.

May 24*th*.—Mr. G. Ferme, of Rosbery, called to say that he had a cow taken ill. She had a wild staring look, her head was protruded, and she had been falling off in milk for a week. I found her as above, heaving her head from side to side, her eyes were glazed, the extremities cold; pulse 70, respiration 26. I immediately bled her to the amount of six quarts, and gave a bottle of castor oil, with five drachms of Barbadoes aloes in solution, and 20 drops of croton oil, alternately, every six hours. Clysters were administered every three hours, and she was drenched with thin gruel: the legs were bandaged.

25*th*.—No better: the same treatment was continued.

26*th*.—Worse: pulse 90, respiration 27, laborious. The wild look had left her, but the head was laid back on the shoulder, expressing much pain. I gave half a pound of Epsom salts, rubbed blister ointment on the sides, and bled to four quarts. I likewise continued the clysters, the hand-rubbing, and the bandaging of the legs.

28*th*.—No better. She was kicking with her hind legs, and

could not get up. I continued to give small quantities of purging medicines until the eighth day, when a small discharge of fœtid matter took place. She died on the ninth day. I examined her a short time after death, and found the intestines in a state of inflammation, more so than I had seen on former occasions; the paunch distended, but the contents soft and natural. This stomach was streaked and spotted with red along the course of the bloodvessels. The contents of the manyplus were hard and dry, coming out in cakes indented with the papillæ, as if they had been baked: these cakes were composed almost entirely of hay and corn, some of the corn looking quite fresh and whole. The cow had been at grass more than three weeks, and during that time had not had any corn; but she had been previously fed on corn and hay, in order to increase the milk for rearing calves. This confirmed me in the opinion I have long entertained, that the third stomach is the primary seat of the disease, more especially as we find the fourth stomach and intestines mostly empty, and the paunch distended, although often with liquid matter; and also that inflammation is a consequence and not a cause of the disease. It also seems likely, that if we could force a passage through the manyplus, and empty it of its contents, we should abate all the other symptoms. The fact is, that if the case terminates fatally, we always find on examination that the manyplus is full and hard, whatever is the state of the other stomachs.

ON REDWATER IN CATTLE.

We sometimes see in your valuable work, The Veterinarian, observations on the redwater, or bloody urine, in cattle; and different opinions and treatments in that complaint. In the circle of our extensive practice, we may venture to say there are several thousands of cattle kept, and among which are frequently cases of the above disease; and we, in addition to giving cathartics, &c. administer clysters composed of water or a decoction of linseed one gallon, oil of turpentine one or two ounces, and two ounces of yellow or white soap, dissolved; and, when there is much irritation or straining, we add ℥j of tinct. opii, and this frequently answers a good purpose.

We insert this communication from an unknown correspondent (unknown, except that the post-mark enables us to more than guess at our man), because it shortly and clearly states a point of practice; but we do protest against this system of anonymous correspondence: it takes from the communication more than half its value.—Edit.

THE REMOVAL OF A FORK FROM THE STOMACH OF A POINTER.

By Mr. KENT, *V.S., Bristol.*

ON Sunday, the 23d of February last, Mr. Harford, a gentleman residing in Bristol, when feeding a pointer dog with flesh, happened to let the fork fall with the flesh, and the dog swallowed the flesh and fork together. On the following morning I was called in to see the dog; and although I could feel the projection of the fork outside, which convinced me that he had in reality swallowed it, yet as the animal fed well, and exhibited no particular symptoms of pain or fever, I gave it as my opinion that there was a possibility that he might live; and consequently he was sent to me to be more immediately under my care. The treatment I adopted was, to feed him on cow's liver, with a view to keep the stomach distended, and the bowels open; and I gave him three times a day half a pint of water with sufficient sulphuric acid to make it rather strongly sour to the human tongue, with the intention of assisting the stomach in dissolving the iron.

On the following Sunday the skin at the projecting point began to exhibit some indication of ulceration; and on Monday a prong of the fork might be touched with the point of the finger, when pressed on the ulcer. I then determined on making an effort to extract the fork on the following morning (Tuesday), the 4th of March, and which I accordingly did, assisted by a medical friend of his owner. The dog was still fed on cow's liver; his appetite remained good, and with very little medical treatment the external wound healed. The animal improved rapidly in flesh during the whole time, and left me in perfect health, and still remains so; and the only inconvenience that existed to any extent was a very bad cough; he was also obliged to lie at length, being unable to coil himself up in his usual way.

The fork was a three-pronged one, $6\frac{1}{2}$ inches long. The handle, which was of ivory, was digested,—it was quite gone; and either the gastric fluid or the acid, or both conjointly, had made a very apparent impression on the iron. I forward the case, rather because the issue was such as no one would have anticipated, than from any expectation I feel of the report being of public benefit.

The plan of treatment I adopted was, without any reference drawn from precedent, such as occurred to me at the moment, and the result was favourable. I gave cow's liver rather than

aperient medicine with a view to keep the stomach full, in order to prevent, as much as possible, irritation from the fork, and to have the bowels open, and thereby obviate mischief in that respect.

EXCISION OF A PORTION OF A COW'S BAG.

By Mr. DICKENS, *V.S., Kimbolton.*

April 2d, 1834.—BEING in the neighbourhood, attending a sick horse, my attention was called by the Rev. H. G—— to a favourite cow, his property, of the Alderney breed, and a superior milker, which had calved some nights previously, without assistance, but in the morning was found with a swelled bag. The treatment of this had been confided to a neighbouring cow-leech, under whose hands she kept getting worse, so much so, that, on his last visit, upon being asked to report progress, he said he was quite *fright*, and she must die. Upon making my examination I was equally *fright*, for the bag was so large as nearly to touch the ground, so hard as not to yield to pressure, no milk to be obtained from it, and one of the hinder quarters was as black as my hat; all arising, I should suspect, from the effect of cold on the bag when in a state of distention after calving, and a congestion of the lacteal vessels taking place: coupled with this there was excessive constitutional derangement, the pulse quick and weak, loss of appetite, nose dry, ears and legs cold, bowels rather constipated.

I sent the following; half to be given that night, the other in the morning: ℞ Magnes. sulph. ℔ss, nit. potass. ʒiv, ant. tart. ʒij: mix in gruel. I likewise ordered about an ounce of sol. chlor. sodæ twice a-day in water. Foment the bag with it, and rub the following liniment well in, ol. oliv. ʒiv, liq. ammon. ʒi.

3*d.*—Much the same; treatment continued, giving the powders according to the state of the bowels.

Continues much in same state till the 7th, the only nutriment being gruel.

7th.—The bag has broken. Dress with ung. digestiv. Continues weaker until the 12th. ℞ Nitre ʒij, ant. tart. ʒi, opium pulv. ʒi, to be given daily in gruel.

14*th.*—The outer skin or covering of the diseased part of the bag has all sloughed away, and left the remaining portion a complete mass of putridity. Wash it frequently with the chloride of soda.

15*th.*—The only amendment being the other portion of the bag feels more pliable, and a small quantity of milk has returned, and slight appetite, I ordered febrifuge sedative medicine.

I now expressed a wish to the owner to detach the whole quarter with my knife; to which he readily consented, telling me the case was in my hands, and I might do as I pleased with it; but that he anticipated a fatal result. After washing well with a solution of chloride, I detached first all the decomposed portion, weighing between four and five pounds, by which means I could see the course of the vessels much better, leaving the remaining portion till the next day, and ordering the medicine to be continued.

16*th*.—After securing, by ligature, the principal vessels, I excised the whole of the quarter (saving just the teat): very little hemorrhage ensued. I ordered a bottle of solution of alum and tr. myrrh comp. equal parts, to dress it with night and morning, after milking; leaving a large vacuum, which certainly, to one unacquainted with the reproductive powers of our patient, looked as if it never would unite again. The owner jocosely observed to me, that I had made a hole, but he thought I should find the most trouble in filling it up again.

18*th*.—The wound looks healthy. Dress as before. Gives a gallon of milk per day. Appetite better.

20*th*.—Going on well—discontinue gruel—turn out during the day.

24*th*.—Wound healing fast—appetite good—milk increasing. Continue dressing as before.

From this till the middle of May she kept improving, when I had the pleasure of seeing the wound quite closed, my patient quite fresh, and giving ten quarts of milk at a meal, which was as much as she had ever given before, and my employer not a little pleased with the result.

CATARACT.

Messrs. Editors,

READING in your last periodical (July), the cases communicated by Mr. Clay, Shrewsbury, upon cataract forming without any previous inflammation, I cannot, in justice to him and the profession at large, refrain from publicly confirming his opinion upon that point, so far as my little experience goes. The cases which I shall relate, and those far more valuable communicated by other practitioners, will shew that veterinary surgeons should be very cautious what they assert when called into court to give their professional opinion.

CASE I.

A valuable six years old hack mare, when first broken, about two years ago, was carefully examined by me, and pronounced perfectly sound. I have attended the same stables three times

a week ever since, and frequently examined every horse; so I am quite confident that there has been no disorder of the eyes up to about a fortnight before a Mr. Knight, who I suppose is a London dealer, called with an intent to purchase her, but discovered a cataract in each eye; in consequence of which a message was sent, requesting my immediate attendance; but by the time I arrived, that gentleman had made his exit. I went with the owner to the stable, with half a laugh on my face at the thoughts of a cataract, well knowing from my frequent inspection, and that of an attentive groom, that there had been no previous inflammation; but after placing the animal in a proper light, my laugh was turned to an *amort* look, for I plainly discovered a white speck in the antero-inferior margin of each lens. This kept progressively increasing for three months, at which time it was about half the bulk of a moderate sized pea, while the eyes in all other respects appeared perfectly bright. Being assured, by the manner of its proceeding, that it would ultimately end in total blindness, she was sold for a trifle to a person who intended to keep her, owing to the beautiful symmetry of her frame, for a brood mare; but I regret that I have not had an opportunity of seeing her since.

CASE II.

A hack mare, about five years old, was brought to me, with an accident of the near eye, by its owner, who had ridden her constantly for two years. When I went towards her, she appeared to be very shy; and while at a distance, I could plainly perceive a white round speck in the centre of the crystalline lens of the other eye; and after inquiring if there had been any thing the matter with an eye or eyes before, the owner replied in the negative. Shewing the cataract to a few attendants, and which was very perceptible to them all, I averred that it would end in blindness; but calling in about six weeks at the farm-house whence she came, I was astonished to find that the speck which, according to my prediction, was sure to cause blindness, had been absorbed, and not a vestige of it was to be seen.

With every good wish for the increasing success of your invaluable Journal, I am, &c.

C. P. N.

Another anonymous communication on this most important subject, and also deprived of the greater part of its value by being anonymous! The post-mark and the initials may enable us to guess at the author; but why this system, which we must now peremptorily stop? To us the name of the correspondent must and shall be no secret.

CATARACT.

By Mr. W. C. Spooner, *V.S., Winchester.*

Report of the Trial, Freestone *v.* Hopkins.—Winchester, July the 5th, 1834.

This was an action on the warranty of a mare sold by the defendant, a horse-dealer at Stockbridge, to the plaintiff, a gentleman residing at Coomb Down, near Bath, at Weyhill Fair, in October last, for £55, and which mare proved unsound. The defendant took in exchange for the mare a horse valued at £20, notes amounting to £20, and a cheque for £15, payment of which was afterwards stopped. The mare was sold subsequently for £27, her keep and expenses were £4; and the action was brought to recover £17, being the difference between the £40 and £23, the price for which the mare was sold, after deducting the expenses.

Mr. Sergeant Bompas stated the case.

Capt. Bisnee was at Weyhill Fair on the 11th of October: the defendant asked £60 for the mare, but agreed to take £55; heard him warrant the mare sound. The defendant and plaintiff went away together to a booth for some time, and then joined me again, when I heard the warranty repeated. I was present at the Bazaar in Bristol, in October, and saw the mare sold for £27.

This witness, in his cross-examination, denied that he had ever been introduced to the defendant as Captain Fitz or Kirkpatrick, or by any other than his real name. Is a captain in the Somersetshire militia.

——Ward.—I am groom to the plaintiff. I was at Weyhill Fair on the 11th of October; my master rode the mare from the fair to Devizes, and I then led her home: the next day, by direction of my master, I took her to Mr. Norfolk, veterinary surgeon in Bath, and within a week from this time I and my master went to the defendant's stables at Stockbridge with the mare. We did not see the defendant, but his son. My master said he had returned the mare, as she had a cataract. The son replied that he would not take in the mare, as his father was not at home. Mr. Freestone said if he refused to do so, he should sell her at the hammer. We returned with the mare, and a few days afterwards I took her to Bristol.

Mr. John Norfolk, veterinary surgeon.—The mare was brought to me on the 12th by Mr. Freestone's groom. I examined her, and observed a cataract in the near eye—it was easily discovered: it is a disease which frequently ends in blindness, and is

certainly unsoundness. The value of the mare, if she had been sound, would have been about £50; the expense of sale at the Bazaars is 2*s.* in the pound, and 3*s.* a night is the usual charge for keep.

The witness stated in his cross-examination, that cataract was an opacity of the lens, and that nineteen out of twenty cases end in blindness: it might be brought on by cold, but does not come on suddenly, and could not possibly be produced in a day.

Mr. Rawlins, veterinary surgeon, Bristol.—I saw the mare at Coomb Down the 21st of October; she had a cataract in the near eye; it is necessary to have a shaded light, in order to see it distinctly: she was decidedly unsound. There was no inflammation in the eye when I saw it, and I have no doubt the cataract had been there for weeks: it usually ends in blindness—it is always, to my knowledge, preceded by inflammation.—This was the case for the plaintiff.

Mr. Missing addressed the Jury for the defendant, and called Thomas Hopkins, his son.

Plaintiff came to my father at the fair about 12 o'clock, and asked the price of the mare, and was told £60. He walked away, and came again about two o'clock; I then showed out the mare in all her paces, and jumped her four times. Mr. Freestone rode the mare for half an hour: I heard no warranty given. The plaintiff and defendant went out of my hearing for about ten minutes, and then the servant was ordered to exchange saddles: the plaintiff then asked the defendant to take a glass of brandy and water, and they went away out of my sight for a quarter of an hour. The first witness for plaintiff was introduced to my father by Mr. Freestone as "Captain Fitz or Kirkpatrick, a gentleman jockey;" but he was not present till an hour after the sale.

In his cross-examination the witness stated, that the mare had been in his father's possession for ten days prior to the fair; that he never knew she had any cataract; she had been in his father's possession two years ago, when she was sold to a Mr. Clapcott, from whom his father again bought her.

Mr. Justice Patteson, in summing up, said that it appeared to him, that the unsoundness of the animal was fully proved, and that the only question for them to decide was, whether there had been any warranty given. The first witness swore to this effect, and he was contradicted by the last. If the warranty was given *about or during the time of the sale*, that was sufficient; but if not till after it was *fully* completed, it amounts to nothing. The horse had been regularly tendered back, and consequently the plaintiff was entitled to recover the value of his keep

and expenses, if the Jury gave their verdict in his favour.—Verdict for the plaintiff.

Messrs. Editors,—I forward you an account of the above trial, not from any particular interest it contains, but in order that you may not be constrained to copy the usually garbled and erroneous account given of these horse causes in the daily press; but whilst on the subject, I cannot forbear stating how much I was surprised on reading in the last number of THE VETERINARIAN a paper entitled "An explanation of the discordant evidence in the case Palmer *v.* Greville." It appears to me to be a *reiteration* rather than an *explanation* of the discordance. Mr. Kent, no doubt, makes the case appear as clear as he can; but the light that he throws on it only serves to make the "darkness more visible." The witnesses were, doubtless, all respectable and honourable men; but it does seem very extraordinary, that such a discrepancy should occur between three veterinary surgeons, not on a matter of opinion, so much as a question of fact. It teaches us, however, that in future we must not place too much reliance even on our own eyesight, and never forget the moral—

"When next you talk of what you view,
Think others see as well as you."

The plaintiff, I should have thought, was entitled to a verdict on the ground that the mare was sold in July, and not examined till the autumn by a veterinary surgeon, as a cataract might have formed during this time; but I cannot imagine that no speck existed in the eye when Mr. Leigh saw it first. I am induced to make these observations, because it appears to me that the trial in question throws new difficulties in the way of veterinary surgeons, out of which I cannot see my way clear; for the case was decided by Judge and Jury, *not* from the state of the eyes at the *time of sale*, but at the *period of the trial*, a considerable time afterwards. I think it has been by this time pretty well proved, that cataracts do *occasionally* become absorbed; and I will proceed to relate a singular case corrobatory of this doctrine.

On the 23d of May last, I was requested by Captain Ward, of Twyford, to see his old mare: she had inflammation in one of her eyes, which was dim and very susceptible of light. On opening the eyelids, I distinctly perceived a small cataract. On inquiry, Captain W. informed me that some years since she had several attacks of inflammation, but not for the last three or four years; and the groom said he had observed the speck for several years. I bled the mare from the jugular vein, gave her a dose of physic,

and desired the eye to be kept wetted. I heard nothing more of the case till July 7th, when the mare was brought to my forge to be shod. I examined her eyes, and could perceive no speck of any kind, or impediment in vision whatever.

Quere.—Was this a case in which the absorbents were roused into action by the stimulus of inflammation, and the cataract was thereby removed?

But let us suppose that this mare had been sold in May last, and brought to me to be examined by the buyer, and that I had pronounced her unsound, and that an action was the consequence. I should have stated in court, that I had examined her, and had found a cataract; but against me, perhaps, there might be arrayed two or three veterinary surgeons, who might have examined the mare within a short period, and pronounced her sound: the result would probably have been, that the Jury would have given their verdict against my employer, and have charitably considered that, if there had been any impediment in vision about the case, it existed in my eyes instead of the mare's.

CATARACT AND HERNIA.

Mr. CARTWRIGHT, *in reply to Mr.* HALES.

AT the time that the trial took place respecting the cataract in Mr. Croft's horse's eye, I, as will be seen by referring to my letter in the Shrewsbury Chronicle, was of opinion that cataract did not take place without previous inflammation, and was surprised to read such evidence given by Mr. Clay on the trial; I therefore was desirous of bringing it forward for discussion, and asserted "that I had no doubt that the columns of the paper would be open for what any person might have to say on the subject." The following week the editor, in his notice to correspondents, says, "The letter by 'Amicus' is too *personal*. The writer whom Amicus professes to answer, affixed his real name to *his* communication, and therefore we ought not to permit him to be anonymously and *personally* attacked." Who wrote this letter I will leave for your readers to judge. The next week the editor, in again noticing his correspondents, says, "If written with more accuracy we have no objection to insert the LETTER from Ellesmere, on the HORSE CAUSE; but the printing it in its present form and language would injure the writer." The author of this letter I well know. Thus the affair dropped for the time.

Fourteen months after (Mr. Hales says, "not long after") the publication of my letter in the paper, I called on Mr. Hales (hav-

ing served my apprentiship with him), and we had, perhaps, ten minutes' conversation together on the subject of cataracts, when he informed me that he was of a contrary opinion respecting the formation of them. He, I grant, was the first person that I ever heard avow the opinion, that cataracts arise at times without inflammation: he also said, that he did not believe this cataract was any harm to the horse, or interfered with his sight, and that he should consider the hernia a greater unsoundness than the cataract. In the course of three or four months after this interview, the cases that I have recorded came under my notice; and in respect of the cataract in Mr. Croft's horse's eye disappearing, my informant was a Mr. Hampson, a veterinary surgeon in Ellesmere, and Mr. Hales knows I told him so. I also know of another case since I published the others.

As to Mr. Hales saying he would not wish to "detract from my professional reputation," I *cannot* give full credit for his assertion, and I have thought so some time, or surely he would not have been the only man to find fault with several of my communications to your Journal, which he knows is the case. I do not deny his right to act so; but one would have thought that common courtesy would have induced *him* to have acted otherwise.

I should also ask Mr. H. why he did not make some remarks on the subject when he forwarded the account of the trial? He must have thought very lightly on the benefit to accrue to the profession and the public by it, and also respecting his priority to the discovery of the fact. I should also like to know "why he thought me wrong in publishing such a letter in the newspaper." Does he think that I should suffer such a statement (although it *might* afterwards prove to be true) to pass unnoticed, when I knew at the time that it was in opposition, as far as my own knowledge went, to the generally received opinion of the profession, and of its authors? I am sure that, up to the time I was with him, it was his; and I never heard him avow a contrary opinion for upwards of sixteen months after the trial. I could not, as a sincere lover of my profession, neglect the opportunity of bringing it to the test; and I always shall, whenever I see anything asserted which I do not think true, contradict it, as I am not one of those meek bodies that likes to pin his faith upon another's sleeve, however high the authority, and much more so, not upon Mr. Clay's; and he may naturally expect, from seeing the cases that I have recorded, "that I should be led to take the views of cataract that I have done," even had I not have heard of the fact from him, but, of course, *strengthened* in that opinion by him.

I, for my own part, should not have thought the speck in the

eye of the horse he purchased a cataract; nor, I fancy, few others would, for there was inflammation existing at the time in the eye, and one would have naturally enough expected that the speck was the consequence, especially as he, on the following day, "thought he perceived a slight motion in the speck."

I should rather be inclined to think that Mr. Hales is also a little singular in his opinion, in saying "that a horse with a hernia, *no matter how small*, would constitute unsoundness." I have seen scores of abdominal herniæ in the horse, and cattle, that have never become strangulated or injured in any respect, although the former have been put to every work likely to produce strangulation. It certainly is not an *impossible* case that they may become strangulated; but I would say, from common observation, that small ones, of about the size of a walnut, are not *very probable* to become so, especially after having existed some years; for, let him examine the parts, and he will find all around the opening remarkably firm, and not likely to give way, and the intestines, being large about the lower part of the abdomen, are not likely to be forced into the opening, so as to strangulate. I would say, that they were more likely to become strangulated when they were in young subjects, and before the walls were firmly formed.

I would agree with Mr. Hales in respect of soundness, "that if the *probable* tendency of any disease a horse may have is to render the parts affected with it incapable of performing their proper function, even at a remote period, I should consider it an unsoundness, although the animal may be perfectly capable of what is required of him at the time of sale;" but I would say, that if, from past observation, small herniæ, similar to that of Mr. Croft's horse, are found, in nineteen cases out of twenty, or a greater proportion, which I think is the case, not at all to injure them in their usefulness, then I should think we ought to consider them, not as Mr. H. does, but sound; for it is a very different case to cataracts, or even incipient spavins, &c.: in the former case the *probability* is, that they *will not come against them*, but in the latter there is *every probability that they will.*

Mr. Cartwright had a claim upon us for the insertion of his reply to Mr. Hales; but as Mr. Clay has made no attack upon him in our Journal, and no new facts or cases, or illustrations of the subject, were given by Mr. Cartwright in that part of his letter, we have struck out all that relates to Mr. Clay. We shall be grateful for the communication of any facts which may add to our rapidly increasing stock of veterinary knowledge. To temperate and friendly discussion on every point of theory or

practice, we object not—we rather court it; to the exposure of abuses any where, and of every kind, we will lend a ready and willing hand; but our Periodical shall never be the vehicle of mere personal altercation.—EDIT.

ILLUSTRATIONS OF DISEASE.

By Mr. W. YOUATT.

"Casts round the world an equal eye,
And feels for all that live."

CHOLERA.

Aug. 23, 1833.—I WAS in the Zoological Gardens, and had been sitting for a considerable time over the paddock of the female zebra; she was walking about as usual, with nothing about her to indicate disease. I was told afterwards that she had not eaten her food that afternoon; but this occasionally happened. One of the keepers passing about seven o'clock thought that she heaved more than usual, and, as he watched her, she purged a thin yellowish fluid. He immediately started off for my house. I was then a-bed, and had leeches on me, for I had been for a considerable period indisposed. One of my pupils returned with the keeper. The purging continued—it was of a thin, whey-like consistence, somewhat tinged with yellow. She was uneasy—occasionally pawing—striking at the belly—looking round at the flanks—stretching out every limb, as if cramped or in pain—grinding the teeth—lying down and getting up immediately—the flanks heaving laboriously—the mouth and muzzle were cold—the limbs intensely so—the pulse not to be felt at the jaw, and 110 at the side: prostration of strength rapidly came on, and before he left her she began to stagger as she walked.

Mr. Chapman attempted to bleed her, but before half a pint of blood was withdrawn she fell. When she rose, he tried again to get more blood, but she almost immediately fell again, and he gave it up. He represented the blood as trickling down the neck like so much treacle. I saw the blood on the following morning, and it did not give any indication of inflammation. He then tried to stimulate the abdomen with spirit of turpentine and liquor ammoniæ. They were well rubbed in, but they did not seem to make the slightest impression. He then gave her a ball, containing antimonial powder, nitre, and opium, and ordered warm water to be frequently offered to her.

The purging continued, but the pain gradually abated; the prostration of strength, however, rapidly increased: about ten

o'clock she began to be afraid to move, for she fell almost as soon as she stirred a limb. She however soon got up again; but before eleven she was unable to accomplish this: soon after that she ceased to make the attempt—she lay quiet—unconscious, and died without a struggle before twelve. She was not ill five hours.

Circumstances prevented an assembly of the scientific members of the society for the purpose of dissecting her until the 26th. The stench, when she was first opened, was of a peculiarly oppressive character, and exceeded any thing I had ever experienced. I do not recollect any fetor that approached to it. The standers-by and the keepers stole away, one after another, and left me and my pupil, and a young man from the College of Surgeons, to accomplish the business; and well would it have been for me if I had gone too; for either the draught blowing upon me or the stench sent me to my bed again for six long weeks.

When the contents of the abdomen were first exposed, *in situ*, there was scarcely any difference in their appearance from that which might have been expected, considering that the animal had been dead nearly three days, except that there was a somewhat unusual pallid, bluish lividness. There were, here and there, spots, patches of a darker hue, but they did not wear the character of inflammation. The whole intestinal canal was evidently filled by some fluid, with an inconsiderable proportion of flatus.

The intestines were then opened. The smaller ones were filled by a whey-coloured fluid, with a tinge of yellow, and of a most offensive smell. They also, and the jejunum particularly, contained at least a hundred worms, of the teres species, but smaller than those usually found in the horse, and with some points of difference from them. There was not the slightest inflammation of any portion of the small intestines. A little quantity of half-masticated hay swam in the fluid.

The larger intestines were filled with a fluid of a somewhat browner colour, and more offensive. A greater quantity of food was swimming in it. The inferior portion of the colon exhibited a few dark dull patches, but, otherwise, was more than usually free from injection. At the commencement of the colon, and about the caput coli, there were externally more decisive marks of inflammation; but it was not examined internally, for that and the cæcum and the stomach were reserved for the Museum of the College of Surgeons. To all external appearance, the cæcum was devoid of inflammation.

The liver was of a livid blue colour—very friable—and the duct filled, not turgid, with bile.

The spleen appeared to be enlarged, and was friable.

The lungs were in the highest state of congestion, and the right side of the heart dilated with black blood.

May it not be said, that the symptoms during life, and the appearances after death, indicated a disease analogous to cholera in the human being?

She had been placed in a low and damp situation in the garden, and where, and where alone in the whole garden, disease, both thoracic and abdominal, had prevailed during the preceding five or six weeks.

PERITONITIS AND ENTERITIS.

CASE I.

July 14, 1833.—A MALE zebra, the foal of her who afterwards died of cholera, little more than a fortnight old, was observed yesterday to strain in passing his fæces, and to-day has been several times up and down, and rolling as if from colicky pains, with a somewhat frequent discharge of fæces—watery—mingled with a little mucus—yellow, and having several unmasticated oats in it. I desired that it should no longer be permitted to get at its mother's corn, and that a drink composed of creta preparat. ʒij; pulv. kino ʒss; pulv. zingib. ℈j; and pulv. opii gr. v. should be given to it to-night and to-morrow morning.

The medicine was given, and produced its effect: the purging ceased, but the little animal continued to be sadly uneasy, and lay about, and rolled on the grass. An ounce of castor oil, and two drachms of the syrup of white poppies were then given. The zebra became easy, and once or twice sucked its dam; but the uneasiness and the purging quickly returned. The chalk mixture was again had recourse to, and the purging diminished; but the uneasiness increased, and on the third day the patient died.

The small intestines were filled by a yellowish fluid, mingled with unmasticated oats. There was not the slightest inflammation of the mucous membrane, but the mesenteric portion of the peritoneum was highly inflamed. The injection was beautiful over the mesentery, but there was not the slightest appearance of it in that portion of the peritoneum which covered the intestines. The abdomen contained more than two quarts of bloody serum.

This was evidently a complicated case. The purging might, and probably would, be justly attributed either to the milk of the mother, or to the young one being permitted to get at too much of her corn. This, however, was a manageable disease: the chalk mixture had immediate power over it; and I do not believe that it had any thing to do with the death of the animal. That I attribute to the peritoneal inflammation, and inflam-

mation of the mesenteric portion of the peritoneum, for there was not the slightest sign of it on that which covered the intestine.

This young animal had been removed from an elevated and dry to a low and moist situation. In its former locality, after it had been running about with its dam on the hill, and then, tired with its gambols, lay down, its bed was dry; here it was damp and cold. The animal was chilled, and the peritoneal inflammation was the consequence of the natural re-action. It was precisely the disease, and with the same morbid appearances, from which the farmer loses many a lamb, when he suffers them to lie about upon a moist and chilling soil soon after they are yeaned.

CASE II.

Oct. 27, 1833.—A young porcupine, a week old, was apparently well yesterday, but this morning it would not eat, and could scarcely be induced to move. A teaspoonful of the castor oil mixture (castor oil 3 parts, syrup of buckthorn 2 parts, syrup of white poppies 1 part) was given, and another ordered to be administered in an hour afterwards; but ere that time arrived the animal died.

There was considerable inflammation of the peritoneal covering and the muscular coat of a portion of the ileum; I should have thought far from sufficient to have caused death, and yet there was no other apparent cause of death.

Of the cause of this inflammation I should hesitate to hazard a conjecture, if I had not several times seen something of the same kind in the lamb. Cold was not concerned, for the cage was in a situation sufficiently warm; nor had there been any other change of food, except that the mother had been somewhat liberally supplied, and that from the notion, confirmed by some naturalists, that the female porcupine, urged by hunger, will not hesitate to devour her young; and this little one was scarcely dead ere she seized it, and seemed as if she would have eagerly devoured it. Perhaps a little less food may be given another time.

When young sucking lambs have been turned with their dams into somewhat too luxuriant pasture, I have known them die as suddenly, and present after death precisely this peritoneal and muscular inflammation, often indeed accompanied by constriction, and occasionally by intussusception; and yet I have always, in my own mind, been disposed to attribute the fatality quite as much, or more, to the influence of cold and ungenial situation than to change of food, for the external coats of the intestines were principally or only affected.

The two following cases in a different species of animal, with the observations made on them at the time, will somewhat illustrate our subject.

CASE III.

Nov. 13, 1833.—A badger ate its breakfast well, and had no appearance of illness. About two o'clock it was seen lying at its length, struggling violently, and it died a minute or two afterwards. The peritoneal coat of the intestines was inflamed through its whole extent, and there was considerable injection of the mesentery. The mucous coat presented no inflammation, neither did the stomach: the lungs were sound, but the spleen was of a blacker colour than usual.

CASE IV.

Nov. 14, 1833.—Another badger refused its food last night, but there was no other appearance of illness. This morning he was found dead. Here also was intense inflammation of the peritoneal coat of the intestines, with very little of the mucous coat, and scarcely any of the stomach. In this case there was considerable effusion of bloody fluid in the abdomen. The lungs were sound.

The examination of these two cases of sudden death, and so closely after each other, could not be devoid of interest. The intense inflammation of the peritoneal coat in both, with the effusion of bloody fluid in one—the comparative absence of inflammation of the mucous coat of the intestines in one, and the perfect absence of it in the other, and the absence of inflammation of the stomach in both—prove pretty clearly that food had nothing to do with the disease. Recollecting the different character of the summer and winter quarters of the badger, I should have said decidedly that it arose from the neglect of this change—that it was the external application of cold, as in the young zebra: but these badgers had been two years in the garden, and had not been shifted, and their boxes were thoroughly warm and comfortable. I cannot, however, help referring the complaint, in a great measure at least, to cold: the weather has of late become suddenly cold; and although we must beware of too much nursing, yet we may take a hint as to the future treatment of these and other animals.

CASE V.

The following case has some little bearing on our subject.

Dec. 31, 1833.—Malabar deer. The coat stares, the animal is out of spirits, and does not feed well. Give a dose of Epsom salts with a little ginger.

Jan. 1, 1834.—The animal was found dead. The whole of the abdominal viscera presented the appearance of severe peritoneal inflammation, mingled with that which would result from maceration in a fluid highly charged with blood, and of which the abdomen contained at least three quarts. The omentum was particularly stained. The mucous coat was scarcely affected. The rumen was full, too full. The maniplus was distended to hardness. The appetite had been unimpaired until yesterday.

On stripping off the skin from the belly, I had observed on the parietes of the abdomen a small puncture, whence oozed a bloody fluid. There was a corresponding mark on the inside of the skin, and some appearance of a minute wound, closed, without. The perforation could be traced through the parietes of the abdomen, and there was a corresponding black mark and oozing on the omentum covering the rumen. Could inflammation have been set up by this? or from this tiny wound had there been slow hemorrhage into the abdominal cavity?

CASE VI.

April 17, 1834.—A foal, the progeny of a little Dartmoor mare, had been observed yesterday and to-day continually lying down, and heaving at the flanks. When it is up, it tries to suck, but there is apparently little milk. There are swellings about the joints, and the animal purges. Give four ounces of castor oil in a quart of thick gruel.

19*th.*—Still weaker; can scarcely stand; breathing quicker; purging more violently. Give thick gruel, morning, noon, and night, with half an ounce of the syrup of white poppies in it.

20*th.*—Dead. Excessive peritoneal inflammation. The belly filled with bloody serum, and some inflammation of the mucous coat of the larger intestines, and particularly of the colon and cæcum, but not at all to the extent which the purging led me to expect.

THE VETERINARIAN, AUGUST 1, 1834.

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

MONSTROSITIES.

ALTHOUGH the great object the veterinarian must always have in view is, to obtain a knowledge of the most successful

means of relieving the pains and of curing the diseases of the animals entrusted to his care, yet it is not necessary, neither is it expedient, that his attention should be wholly engrossed by the effects of medicines upon his patients, while labouring under disease. It is of importance that he should look around him, and observe what is commonly occurring among his patients, and also to watch and examine those cases which are more rare; not only that he may be enabled to enlarge his own stock of knowledge, but also that he may add contributions to the general treasury of science. It has been said that little advantage is to be derived by the veterinary surgeon from the study of comparative anatomy; and it may by some be thought a matter of still less importance to examine those cases of lusus naturæ which the veterinarian meets with. We, however, are of a different opinion, and do not hesitate to say that there can be no course of study which he can pursue as an auxiliary, that will yield greater advantages than comparative anatomy; and we hope that every veterinary surgeon who has had the opportunity has attended, and that every veterinary student also has diligently attended, the highly valuable and interesting course of lectures on that subject, delivered by Professor Grant in the London University; for we feel assured that whoever has done so, will always appreciate the advantages derived from them. Comparative anatomy is indeed, or at least ought to be, the basis of our profession. We are compelled to enter upon it, before we can have a knowledge of the structure and functions of the subjects on which we practise; and we know from practical experience that it is a field, once entered upon, which cannot be left without deriving both pleasure and advantage from it. Several years have elapsed since we had the pleasure of hearing the lectures of Professor Grant, in Edinburgh, which, together with those of our friend the late Dr. J. Barclay, we wish we had been able sufficiently to store up in our memory: they have, however, left a deep and valuable enough impression to warrant our thus strongly recommending the subject to all those who have the opportunity of attending to the study.

But although we have taken this opportunity of alluding in a

general manner to comparative anatomy, our present object is to direct the attention of our brethren in the profession to one branch of it, namely, the subject of Monstrosities, many cases of which are met with in the course of our practice, especially in the country, and by those who are more particularly engaged amongst cattle. The subject is one which has been but little investigated in this country, at least by veterinarians; yet we are certain that it has only to be suggested, in order to produce many an account of curious cases. We have been led to these considerations by lately meeting with a very singular case.

A mare, the property of Mr. Johnston Hillhouse, near Kirknewton, dropped a foal in the beginning of April, in the head of which there were several remarkable peculiarities. It had only one eye, which was in the centre of the forehead; there were neither nasal cavities nor nostrils: it was alive when foaled, but the superstitious notions of the farm servants induced them to destroy it; and having cut off the head, they sent it to town to their master. The eye externally appeared rather small; the cornea somewhat flat. The eyelids being closely attached to the periosteum were unable to close upon the eye, and had the appearance of being the outer angles of the eyelids brought together so as to form one—they, however, were not united so as to form complete eyelids; but they had made two angles, the one above and the other below the eye, running vertically in the centre of the forehead, so that there were four corners or angles formed by the eyelids. The lachrymal duct descended from the inferior angle between the superior maxillary bones, and terminated in the palate, having taken a somewhat curved direction between these bones, which were formed almost entirely of alveolar processes, and, when filled with the teeth, seemed a solid mass of bone. The termination of this duct was at the inferior extremity of the maxillary bones, and the duct was formed in a groove which was seen on separating the maxillary bones, together with another about an inch and a half posterior to it. The ears stood in the natural position, and, as far as they were examined, were completely formed. On dissecting the skin from the forehead, it was found that the whole of the portions of the frontal bones

which form the anterior part of the cranium and the frontal sinuses were wanting. The superior orbitary processes had approximated and united together at their apex, so as to form one orbit, in which the eyeball was lodged. On removing a portion of these and the parietal bones, a blackish-coloured body was seen occupying the situation of the cerebrum, extending from the tentorium forward to the orbit, at the place of what appeared to be the boundary of the cranium inferiorly. This black body had a membrane which covered a small portion of the anterior part, and which seemed to form the sclerotic coat of the eye, and was continued forward to the cornea. In short, this body was the eye, which extended backward into the cranium; the black colour being given by the choroid coat which formed the external tunic of the posterior portion of the humour. On removing the choroid coat, the expansion of the retina was seen covering the vitreous humour, which was of unusually large quantity. The optic nerve entered the eye at the under surface in rather a peculiar manner, and one which seemed to illustrate the fact how simply nature arranges things under peculiar circumstances, in order to overcome what to us mortals would appear to be a difficulty; at least it would serve to illustrate a theory which we advanced in a paper read before the Royal Physical Society some years ago, to shew how the inverted image of objects on the retina is corrected by the curve which is made by the optic nerves in their course between the eyeball and their origin at the corpora quadrigemina. In the case before us there was but one optic nerve, which took its origin from the only portion of the cerebrum which was present, and which corresponded with the corpora quadrigemina, and, as in those cases, formed a complete semicircle before entering the eye; and the impression of the image of objects must, from this cause, be presented in the relatively proper position as it reaches the origin of the nerve at the gemini. The whole eye was elongated to about triple the ordinary size; the anterior parts were, perhaps, more naturally formed than the posterior: the lens seemed to have the appearance of being double, but from accident was not examined with sufficient care.

The cerebellum was about the natural size and appearance; and all the nerves, with the exception of the olfactory, could be traced. From the dura mater there extended, in the situation of the tentorium, a bony tumour resembling a tooth.

We have already stated that there were no nasal cavities. The superior maxillary bones were thick and strong; the incisive bones were wanting, consequently there was a considerable shortness of the upper jaw: at the extremity of it, however, there hung a tumour containing the incisive teeth. The skin upon the upper lip had the appearance usual in the natural state of the parts; the lower jaw was nearly three inches longer than the upper, and was in a considerable degree curved upwards, so as to approach in some measure to the upper. From these circumstances the mouth was on the front of the face at the lower part, and seemed well adapted for sucking the teats of the mother, had it been allowed to live. Its tongue was well formed, but rather longer than usual; a circumstance which might have enabled it to have gathered in its food to the mouth, notwithstanding its peculiar form.

It was stated by those who saw it alive, that it breathed with considerable difficulty through its mouth, which arose from the velum palati, which was about the usual length, falling down and closing the opening from the pharynx into the mouth, so that its breathing must have been effected with great difficulty and convulsive efforts. The lachrymal bones formed the basis of the orbit, and in the median line were united, and formed in their union a foramen, which was the commencement of the lachrymal duct. The ethmoidal bone was entirely wanting; in its stead the palatine bones were enlarged, and connected the superior maxillary and sphenoid, and formed in part the floor of the cavity of the orbit. The palatine bones united to form a small canal, sufficient to admit a small probe, which arose posterior to the velum palati, and, taking a curve, terminated in the palate, about $1\frac{1}{2}$ inch from the inferior extremity of the superior maxillary bones, and in the median line: this tube presented a trace of the nasal cavity, and might have allowed a very small quantity of air to pass, but was not observed until the bones were mace-

rated, and only known by the small grooves in the maxillary bones, posterior to the lachrymal grooves, and then by the union of the palatine bones.

In addition to the above, we give the following account of two cases with which we have been favoured, and which occurred in the practice of Mr. Tennent, V.S., Revenstrather. He was sent for to see a foal, the property of B. Dalziell, Esq., near Lanark, which was supposed to be affected with constipation of the bowels (a not unfrequent occurrence in newly dropped foals); when he saw the foal, it had been ill about twenty-four hours. It exhibited the usual symptoms of constipation, with the exception of the absence of tympanitis, but was evidently in a dying state: ℥iv castor oil and ℥iv Epsom salts were, however, given, and also some clysters. The clysters were returned unaltered, and it died about an hour after his arrival. On the *post-mortem* examination it was found, instead of what might have been expected from the symptoms before death, that about a foot anterior to the *anus* the rectum became diminished to about the size of a common goose quill, and, after continuing forward of the size, terminated in a tumour containing a cavity about the size of a small pigeon's egg. The colon was not reflected upon itself; was about two feet long, and terminated in a cavity like the rectum. The caput cæcum and the rest of the viscera were in their natural state.

About six weeks ago he was sent for, at nine P.M., to attend a cow, the property of H. Monteith, Esq., Carstairs, which had calved about two P.M. He learned that for four years preceding she had had twin calves, and it was suspected she had still another calf in the womb. On introducing the hand, he found a substance which resembled, to the touch, a portion of liver, and which afterwards proved to be so; for it was found that the parietes of the abdomen were wanting. The common integuments were reflected upwards upon the sides, and the whole viscera left exposed. The near hind leg was bent first forward and then backward over the ileum, towards the tail, somewhat enveloped in the integument of the belly. There was no diaphragm, but the thoracic viscera were otherwise entire. The hind leg,

already mentioned, was found, after the calf was extracted, to resemble the fore leg, more especially in the form of the hock joint, which exactly resembled the knee.

Division of the Flexor Tendons.

In our number for March, Mr. Holford has given an account of a case in which the division of the flexor tendons had not been followed with the advantages he expected, and requests to be informed of the result of some of those cases which have been recorded in our Journal, alluding especially to the animal mentioned by the late Mr. Castley, which was operated on by Mr. Dick. The pressure of business has prevented us from giving Mr. Holford the information he wished for; but it was in a great measure supplied by Mr. Young, of Garnkirk, and might have, indeed, been left entirely to that answer.

The successful or unsuccessful termination of an operation does not, in every case, establish the propriety or impropriety of its repetition, because there may be many collateral circumstances which would lead, in one case, to an unexpected or unwished for termination, and which may, at the same time, be totally distinct from and independent of either the operation or the ordinary consequence of it. We hold, that the veterinary surgeon who expects to be able to restore parts to their entirely original condition by operations, and who, unless he can do so, will not operate, must be deterred from doing that which is good in many cases, and will at last find it necessary to operate; for experience and observation will teach him to take another view of things, and lead him to content himself with being able to restore parts to a condition which may enable his patients to perform their labours with less pain to themselves and with more advantage and pleasure to their owners. Had Mr. Holford's informant respecting the case operated on by Mr. Dick been honest, he would have informed him of the circumstances connected with the affair he alludes to; and it would then, perhaps, have been a matter of less astonishment to Mr. Holford that the horse was, at the end of six months, as bad as ever, than to have been informed that he continued sound.

The horse in question had been purchased by an Irishman, a coal-carter, for, we believe, 30s., the seller supposing him incurable. He was brought to the Edinburgh Veterinary School, and operated on with the best prospect of success, and was so well in six or seven weeks, that he was sold for £10, and immediately put to regular hard work, contrary to the advice given; for it was stated that he should be gently used until the leg had got a little more strength. Almost as a matter of course the limb, in its weak state, received a fresh injury. He was driven on by the new master; he got worse, and the sinews, as in all cases of strain, where such abuse exists, became gradually contracted. But although in this case, from the animal being in the possession of individuals who cared not what became of him, provided they could make an immediate profit of him, either by sale or by cruel treatment, little permanent good was done, it must not be supposed that this happens with every one; for it has been found that the greater number of those which have been operated on are able to do their work for years after. A horse, belonging to one of the proprietors of the stage-waggon which travels between Edinburgh and Newcastle, Mr. Anderson, of Channel Kirk, travelled nearly six years in the waggon after the operation; another, belonging to Mr. Bartholomew, of Greendykes, a farmer, about twelve miles west from Edinburgh, continued to do his work for nearly a similar period; and, in both cases, without any appearance of contraction again taking place. Many others have done equally well; but we do not remember, at present, any who continued as long as those mentioned, for after diseases cut them off. The success of this operation, like all others, depends upon the selection of proper cases; for it must be known that there are some that do not admit of a fair expectation of success by this means. Those which depend upon disease of the bones of the pastern, in which, perhaps, the coffin or pastern, or fetlock-joints are anchylosed, are very apt to go wrong again, because the operation does not give relief to those parts; and in cases where the contraction is but slight, especially in the hind legs, there is often a great degree of weakness produced from the difficulty of keeping the fetlock in the proper position. There are cases also of contraction of the

limbs, in very young animals, in which the operation is improper, because these can generally be cured by other means; and cases sometimes fail, even where the operation is proper, from the improper manner in which the animal is treated in regard to shoeing: thus we have sometimes seen considerable injury done by the country smith putting on a shoe with a large tip, in order to give the foot a purchase; the consequence of which is, a fresh strain, and this almost on the animal being first put to work: the heels should be elevated a little, so as to keep the weakened part as easy as possible, until it has acquired mature strength.

We might enlarge on this subject considerably, but refrain, as it would lead us into a wider field than we have leisure, at present, to survey with the correctness the subject merits.

D.

Veterinary Affairs.

PROFESSOR COLEMAN'S ADDRESS TO HIS PUPILS—CHEMICAL LECTURES—SECRET OPERATIONS.

WE have received the following letter from a student at the Veterinary College:—

"*A further Gradation in the Veterinary Profession.*

"I cannot close this day without taking up my pen and sketching an impartial extract from that which our worthy Professor has this day descanted on prior to the delivery of his lecture. He stated that as it was his wish to study the welfare of every pupil; and, as in his present situation he half regarded us as his children, it behoved him to speak openly, and yet with due good feeling to each of us; and particularly openly and yet with good feeling to those young men who had disgraced not only themselves but him by having presented themselves before the examining committee, knowing at the same time their deficiency, and shewing their inability to answer questions altogether fair and plain. He would further state, that their deficiency was principally in chemistry, which, as a science, ought to be perfectly understood, and at the finger's-end of every pupil; for this branch is now cultivated by every gentleman of education; and should he find the veterinary surgeon deficient, he will be much lowered in his estimation: therefore the committee had determined to be more strict with regard to this branch. He had inquired of Mr. Morton, and found that they had in their library

some of the most modern works in chemistry, and they have also Mr. Morton, who is an excellent chemist, and whose lectures all should attend. He therefore hoped they would be more studious on this point, as no one was more interested about them, or could feel greater pleasure than did his worthy friend, Sir Astley, that each should pass his examination, provided he is industrious; and that conjoined with sobriety, as the society he must hold in his profession must be respectable, and therefore he must disclaim the low notions, and habits, and companions of the common farrier.

"There is also another branch, that is Materia Medica, which they should be thoroughly acquainted with; for of what value can that piece of paper be to any of them, if they know at the same time their insufficiency to practise the veterinary art? while, at the same time, they are disgracing those gentlemen who have subscribed their names to their diploma. 'I therefore trust,' he concluded, 'that this will merit your due consideration, not wishing, in the least, to offend any of you, but being bound to remind you of that which may be for your essential good.'

"This was received with the loudest acclamations from all the pupils, who seemed much affected by this marked attention which he had so kindly manifested towards them.

"This will, no doubt, be considered as an imperfect summary; but it will serve to shew that our worthy Professor is ever and anon wishful to promote the advancement of the veterinary profession; and I am glad to find that he has so far altered his opinion with regard to those who may be capable of practising; for he states, in his introductory lecture, that these sons of Vulcan, &c. &c., will generally be found the most competent. Let me ask (although he has to-day answered my question), can they rank in the associations of life with those of other professions? They would deteriorate that summit of perfection which the art is struggling to attain. I have no doubt that the time will come when men of talent and education will totally outstrip these competitors; and I must say that we are indebted to the honourable gentlemen who wisely and kindly exercised their discretion in rejecting those whom they deemed incompetent.

"Before closing this communication, I will glance at another subject, which was hinted at in your valuable publication a short time ago. I refer to the operations of that institution, many of which are done, as it were, in a clandestine manner. Instead of being publicly known to every pupil, and the operation performed in the presence of each individual, it is just confined to one or two of the favourites, or those who may luckily find themselves within the college walls; and, should any of the patients die, the post-mortem examination is conducted in some such similar man-

ner, that but few are present, or rather are not aware of it; and you, gentlemen, know that there are many thus destroyed or smuggled over which would be of particular moment and interest to each of us. I have known many of the pupils waiting for hours to know when the operations were to be performed, and thus idling away considerable time which might have been advantageously employed in that particular branch which our worthy Professor has here so strenuously endeavoured to induce us to study. I shall here close these imperfect but important remarks,—important as it regards our professional well-being,—hoping that my letter may have some beneficial effect, and that each will join hand-in-hand in advancing the cause of veterinary science.

"STUDENS.

"Royal Veterinary College,
July 18, 1834."

We readily insert this letter. The expressions of paternal attachment to his class by a professor of more than forty years' standing, and the honest return of respect, and gratitude, and affection from the pupils,—these are scenes in which one delights to mingle; they are a few of those redeeming hours which more than repay us for the dissatisfaction and disgust with which we sometimes contemplate the events that take place around us. Let us not break, but give perpetuity to the charm.

The Professor of the Veterinary College tells his pupils that he "half regards them as his children." These are words that will not be soon erased from the memory. He, the companion of those who occupy the first ranks of science and public estimation, speaks of his children, too, mingling with "gentlemen of education," and warns them not to permit the discovery of their ignorance to "lower them in the estimation" of such men; and he calls upon them "*to disclaim the low notions, and habits, and companions of the common farrier!!*" Never let this exhortation be forgotten by those to whom it was addressed; never let it be forgotten by the Professor himself, when the excitation which gave rise to it shall have subsided. Never more let the youth whose honest glowing emulation had received fresh impulse from the liberal studies he had pursued, be astounded, paralyzed, every energy depressed, destroyed, by the icy, withering, deadly influence of an introductory lecture.

The professional father of his class exhorts his children to give far more attention to chemistry than they had hitherto done; stating how essentially it was connected with the knowledge and practice of their art, and, in its various bearings and ramifications, with their acceptance among their employers, and among "gentleman of education;"—and so say we: and, had we any influence over the pupils, we would say, too, "Appear not before

the examiners, and, what is of a thousand times greater consequence, appear not before your employers and the public, until you have attained that knowledge of things around you, and of nature generally, which is indispensable to the scientific—we will say more, the honest—discharge of your duty; which will enable you to take your part in that better kind of conversation in which those around you will sometimes be engaged; and which, however offhandedness and impudence may enable you for awhile to go on and to deceive, will alone save you from ultimate discovery and disgrace."

The Professor urges his pupils to attend on the lectures of Mr. Morton; and so, if we had any inufluence, should we; for he was educated a chemist; he is capable of imparting much valuable instruction, and we believe that his heart is in his lectures: but still we must turn upon this father of his school, and ask him, Whether it is quite right and proper for him to compel his children to pay for that out of their own private hoard which he is, by the law of the school, compelled to teach them himself, or by a salaried deputy?

We take down a little book from our shelves, published by authority, "An Account of the Veterinary College, from its institution in 1791," and there we see (under the article "Regulations," and the section of that article, "The Distribution of the Studies") the following plan arranged. It thus begins: "Although the particular distribution of the studies shall be referred to the judgment of the Professor, yet the general order of them shall be nearly as follows:—Zootomy,—the exterior knowledge of the Horse—Operations—the practice of Operations; and then, a certain period of time being devoted to each of the three first, the fourth shall employ them the mornings only. In the evenings they shall be instructed in the Materia Medica."

Next it is said, "The pupils shall attend a course of Pharmacy, to obtain a knowledge of the different preparations. They shall divide their mornings between the dispensary and laboratory. A knowledge of the common plants and herbs being necessary to the veterinary physician, the pupils shall attend a course of Botany relative to veterinary medicine. This course shall take place in the afternoon."

Here, then, we say, we must turn upon the Professor, and ask him, Is it quite right, is it quite father-like, to cheat his pupil-children out of what is legally their due? It is as plain as A, B, C, that the students were to be taught chemistry, pharmacy, and botany; that they were to be taught these at the Veterinary College, and that instruction in these was included in, was paid for by, the initiatory fee: therefore we say, that the Professor has no

right to make them pay for their instruction in chemistry out of their own little pittance; and he most certainly has no right to find fault with them for ignorance of that which he does not teach them; much less to talk of their "disgracing him by their ignorance," when he has taken no pains to remove that ignorance. We wonder how the Professor or "his friend Sir Astley" would look, if a spirited pupil, who had passed a brilliant examination on every other point, were purposely to make a worse answer to a chemical question than that "water is the natural drink of horses," and get turned back for it; and then bring the whole matter before the public, and ask how he could learn if he was not taught; or who had any right to compel him to pay for attendance on lectures which the regulations of the college said the Professor should deliver, or cause to be delivered, gratis.

We question not—no, not for a moment—the genuineness of the feeling which prompted this address to the pupils on that morning: the habit—the habit, unquestioned for many a long year—of omitting these lectures, had taken from the mind of the Professor all feeling of obligation to deliver them. But these are days of reformation; and our school, among other places, must be reformed; and it must be reformed in this particular, among many others; and it must be reformed soon, and by those who are now at the head of it, and before others take it into their heads to effect a more sweeping reform. There stands the law, and the thing should be looked to.

Shall we be told that times are changed since these regulations were drawn up, and that twenty guineas would be a very inadequate fee for instruction in all these branches of science? We readily acknowledge that it is so. The times, indeed, are changed; our art is rapidly advancing; the situation in life whence we now spring, our prospects, our associates in future life, are far superior to what they once were.

The fee, compared with the expenses of the student of human medicine, is far too small; then add half as much again to it—double it—you would consult the respectability of the profession, and you would have the thanks of the profession generally.

The original fee might remain with the Professor; no one wishes to touch a doit of that. The respectability of the profession demands that the head of it should be handsomely—he would not then be extravagantly—remunerated; and the surplus would be a fund sufficient to enable the governors of the college to provide competent teachers in all the branches of science included in the regulations, or necessary for the preparation of the future practitioner, and to begin at last to keep faith with the pupils.

Little do those connected with the Veterinary College know how far its reputation is compromised by the system now pursued there, or how many there are who regard it (and naturally enough, as it is now conducted) as a place where all are in combination to pillage the poor student to the utmost of their power! where the Professor pockets the whole fee, *the whole that is ostensibly required;* after which operation the student soon finds that the Assistant Professor (an examiner, and therefore one to whom he dares not to say nay) demands his five guineas for lectures on veterinary surgery, which "the Regulations" had previously ordered to be given gratis; and soon after this, three guineas more must be paid to a gentleman out of the College, because the Demonstrator or Assistant Demonstrator cannot or will not effectually teach anatomy, or prepare for the examination, and for which also "the Regulations" had provided. He has not paid all even yet: two guineas more must be forked out for chemical lectures, useful ones no doubt, but for which also "the Regulations" had made provision: and, last of all, the Assistant Demonstrator gets another guinea, for——we are sure we cannot tell what! A stranger would say of this—and a great many do not scruple to say—that it *looks like a barefaced system of robbery.*

The remedy is simple, effectual; the honour of the profession requires it; the voice of the profession would sanction it. As to the system of favouritism, and secret operations, we have heard of it from various quarters. It is a most shameful thing; and if it is not speedily redressed, we advise the pupils to memorialize the Examining Committee: there are many honourable men and true among them, and we think that justice would be done. The governors would form an ulterior court of appeal.

Y.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

THE FARMER'S GUIDE; *or a Treatise on the Management of Breeding Mares and Cows, with a Selection of proved Prescriptions for the Diseases of Horses and Black Cattle. By* JAMES WEBB, *Veterinary Surgeon, Elgin.*

THE contributions to our Journal from our Scottish friends have so rapidly increased of late, both in number and value, and our opinion of the professional worth of our northern brethren had become almost daily so much more favourable and decided,

that we opened with much interest this first systematic "Treatise" that we had ever seen on the Diseases of Horses and Cattle, by a practitioner north of the Tweed. Although it professes to be "A Treatise on the Management of Breeding Mares and Cows," the greater and the more important part of the work is devoted to a consideration of the nature and causes and treatment of the diseases generally of these animals. We confess, however, that we were somewhat startled when, perusing the introduction, in which a little too much had previously been said of the author's "study and practical science," we found the following recommendation to his readers: "I, therefore, hope that those who may have occasion to use any of the means I have prescribed, in whatever case it may be, will follow the directions exactly as they are given; not to omit any part, either in bleeding or administering medicine—how contrary soever it may seem to their own ideas (!!); for I have given no prescriptions but such as I have tried, and proved to be uniformly successful." This was so contrary to our notions of good practice, as consisting in the abandonment of specific nostrums, and carefully and anxiously adapting our treatment to the daily, hourly change in the character of disease—it appeared so much like the language of those who, pretending to know every thing and never to fail, actually know nothing at all, and are continually blundering, that we had nearly laid down the book in disgust. We, however, turned to Mr. Webb's account of the diseases of horses, and we took the first—*strangles*, for which the effectual application of a turnip-poultice with some hog's-lard in it is recommended. To this follows the account of another disease, called the BASTARD STRANGLES, and "which is much more dangerous, and many young horses have died in consequence of it—in which matter forms in the inside of the throat, and the adjacent parts become so much swelled and inflamed that the animal can hardly breathe, and there is a considerable degree of fever," and in which, very properly, bleeding is recommended; but the principal reliance is on the following medicine, which "is well calculated to check fever, and to strengthen the stomach, viz. Peruvian bark half an ounce, nitre one ounce, and honey four ounces, given in a bottle of chamomile tea, the throat being fomented with warm water frequently, and well rubbed with hog's lard."

We quote from our author, and we shall generally leave him without comment.

In the next page it is recommended to "burn out the lampas with a hot iron, and to rub the part with a little salt."

The following luminous description of glanders beats all that John Hinds, or Ephraim Blaine, or J. C. Knowlson, ever wrote:—

"Glanders is known by a discharge from the nostrils, and a

swelling of the glands under the jaws. The animal's appetite or spirit is seldom affected at the first commencement; but in course of time, the discharge becomes more copious, and is often mixed with bloody matter, very fetid, and offensive in smell; which is owing to the inside of the nose being ulcerated. At this stage of the disease the animal often labours under a cutaneous scorbutic disease, called Farcy; the acrimonious humours of which fix on the pituitary membrane that lines the partition along the inside of the nose, which causes ulceration, and penetrates even into the bones. At this stage of the disease the discharge is often confined to the left nostril; the glands become harder, and more firmly fixed to the jaws, which constitutes a confirmed glanders, and is incurable and infectious.

"I will admit, in this stage of the disease, that a sound horse may receive the contagion; yet I am confident that it more frequently originates in the system of the animal, or is brought on by other diseases and local causes, than by infection. I will, therefore, endeavour to point out the causes that lead in regular gradation to the glanders.

"Colds proceed from obstructed perspiration, which disease the absorbent or lymphatic vessels, and contaminate the blood; the animal is very feverish and ill, till nature relieves him in part by a discharge from the nostrils. If the animal be frequently exposed to colds, and no means used to relieve him by reducing and purifying the blood, his whole system becomes deranged, and gets into a state of morbid debility; which generally constitutes the disease called Grease; and the corrosive acrimonious humours of Grease, by continuous gradation, if neglected, end in Farcy—Farcy in Glanders—Glanders in death."—p. 28.

Does this require comment? It shall, at least, have illustration—the author shall be heard on the subject of farcy.

"Farcy, as well as Glanders, is generally supposed to be infectious. There are also different kinds or stages of it: the first or mildest stage of it is, when the small tumours or farcy-buds are seated about the head, shoulders, and hips. The second, or most malignant stage of it, is, when the veins in the inside of the thigh and fore-arm become corded and set with tumours. These buds are small and hard at first, but soon extend and become full of thin, acrid, poisonous matter, and often turn into inveterate ulcers.

"When these tumours break and discharge copiously, the disease is thereby considerably mitigated, and the animal relieved of a part of that corrosive humour which otherwise, if due care be not taken to prevent it, would spread through and contaminate the whole system, unless it should vent itself by a dis-

charge from the nostrils, which is the malignant stage of the disease, and is commonly termed the Farcy Glanders. In the course of my practice I have generally found that the greater the number of these buds, or tumours, that fill and discharge their contents, the less likely the animal is to discharge at the nose. It is evident that the disease first originates in the blood; the acrimonious humours of which spread through the system, and affect the absorbent or lymphatic vessels, and cause these buds or tumours. In the first stage of this disease, or as soon as it is discovered, I would recommend the following purifying powders:

Nitre.....six ounces
Antimony.....three ounces
Flour of sulphur...three ounces

The above should be well mixed, and divided into twelve equal parts: give one at night and one in the morning for six successive days. The powders should be given in a little bran mash, or boiled barley, and warm water to drink. At the end of six days, or when the powders are done, give the following purging drink:—

Glauber's salts.....two ounces
Rhubarb in powder..one ounce
Tincture of ginger..half an ounce.

The above should be given in the morning, while the horse is fasting, in a bottle of warm ale, with a little honey or treacle in it: the horse should be kept warm, and get walking exercise often. In many cases of Farcy I have given three courses of the powders, and three of the purging drink; and have found it to prove effectual in purifying the system."—p. 62.

The treatment of wounds and contusions on the joints is thus spoken of:—

"*Wounds and Contusions on the Joints.*

"These cases are commonly very difficult to cure, as it is dangerous to encourage suppuration near any joint, particularly if the wound or puncture reaches near the ligamental pus that surrounds the joint, as there is a danger of bringing off the synovia, or joint oil, which is often the cause of stiff joints and of incurable lameness."—p. 46.

Yet Mr. Webb had said in his introduction, "I was rather diffident to undertake the work, as so many eminent authors have already favoured the public with their discoveries in that very useful branch of knowledge; but on the consideration that these scientifically written books—though well adapted for the assistance of veterinary practitioners or men

of learning—are very obscure and difficult to be understood by those of a more limited education, I flatter myself that a few instructions, written in a style more easy to be comprehended, may be useful to many."—Introduction, p. 5.

On the subject of Worms we leave Mr. Webb to the tender mercies of our friend Mr. Bracy Clark, and he has full authority from us to lay it on as thick as he pleases.

"Worms are very troublesome and destructive to horses: there are three kinds of them, but those that breed in the stomach, termed botts, are the most mischievous and dangerous; they often adhere to the sensible part of the stomach, and cause ulcerations, which produce excessive pain and uneasiness to the animal. I have heard of instances of horses being so much griped and pained with botts in the stomach, that it has been mistaken for a colick; and there are instances recorded of horses having died in consequence of the pernicious effects of these vermin."—p. 41.

Shall we make farther extracts? Yes, one more, extorted from us by mingled indignation and contempt, and by the hope that we may rescue a noble, ill-used servant from cruel unmerited torture.

"*Poll Evil.*

"This disease most commonly happens from hurts or bruizes on the poll, sometimes from violent strains on that part, which may happen by the animal hanging back on his stall-collar; these causes produce inflammation between the poll-bone and the first vertebræ of the neck, and often ulcerates and spreads a considerable distance round, so as to injure the bones of the neck, before it breaks, or any appearance of matter is to be seen: in this case there is no sure mode of cure, but by laying the part fairly open, and cutting away the diseased and rotten parts, which should be performed by an experienced operator, as there is danger of injuring the ligaments and principal tendon of the neck. As soon as the operation is performed, the part should be dressed with the following styptic:

Oil of vitriol.....one ounce
Corrosive sublimate..two drachms.

The above should be well mixed, and applied to the part after the bleeding subsides."—p. 104.

This is worse than that which used to be the damning blot on the practice of the Royal Veterinary College. We publicly, cordially thank Mr. Sewell for the removal of it, and for the determination, publicly honourably expressed, that he will never again have recourse to the scalding mixture.

But what have we here? Sulphuric acid and corrosive sublimate, each of them a corroding, torturing caustic. Does any decomposition take place, any neutralization of their dreadful power? No; the chlorine is too firmly united to the mercury for the sulphuric acid to effect any change in it; and two of the most horribly destructive applications which a demon could select are mingled together—the strength of the one is added to that of the other. The operator waits until the bleeding subsides, that the parts may be fairly denuded and exposed; and then these hellish ingredients are poured over the aching, sensitive surface that he had just been mangling. For shame, Mr. Webb; for shame!

We turn to the second part of the work, in which the diseases of cattle are treated of; and we stumble on an explanation of the barrenness of some cows, new to us, and a point of anatomy, also new to us. "It is a notorious fact, that many thriving cows, for many years past, after going to the bull have not conceived. I have been induced to use every means in my power to investigate the cause; and I have discovered, beyond a doubt, and will prove, that it proceeds from an inflamed state of the blood, which affects the generative organs that are connected with the euterus (womb), and which causes irritation and frequent excitement for the bull; but the cow cannot conceive, in consequence of the deranged state of the seminal arteries"!!

There is one sentence at the close of this section, which we can only understand on the supposition that Mr. Webb is deeply versed in the celestial art of Moore, the prince of astrologists. His title-page is dated 1834; his introduction is dated January, 1834; and this portion of the work, according to our knowledge of the mysteries of the press, and that is no slight one, must have been written in the preceding October, or November at the latest; yet Mr. Webb writes, "I would, however, this season, 1834, particularly recommend bleeding as well as purging." Fy! fy! this is quackery with a vengeance, unless, in truth, he is the wonderful man alluded to by Chaucer:

> "With us there was a docteur of phisike,
> In all this world ne was ther non him like
> To speke of phisike and of surgerie,
> For he was grounded in astronomie."

In p. 158 Mr. Webb "pledges his word, *that he has never failed to cure the redwater when promptly called:*" at the same time he adds, "the vast number of cows that have died of redwater within the last three years it is grievous to consider." And how is he able to do all this? Why, he says, "I consider myself the first man that introduced the practice of bleeding for

red-water." Indeed! then this refers to the veterinarians of the north. Does the cap fit you, gentlemen? For us of the south, I can only say, that long before "1813 when Mr. Webb came into Elgin," many of us were accustomed to bleed invariably in *acute* redwater, and to be guided by the condition of the beast and the degree of fever as to the propriety of bleeding when the disease assumed a chronic form. If Mr. Webb means more than this, why we think he had better go to school again; and we marvel much at his strange and uninterrupted success.

In tail-ill, p. 207, Mr. Webb has seen "the bones of the tail quite vanish" into air, thin air, "from the end of the tail for ten or twelve inches upwards." The fact was, that Mr. Webb, in that superlative knowledge of anatomy, at the possession of which he so often alludes, mistook the interposed soft part, between the handle and the thong of this admirable whip, and without which it would have been comparatively useless, for the magic conjuring away of the bones.

Have we been severe in our criticism of Mr. Webb? Hear our apology:—We have witnessed the rapid improvement of our art; perhaps we have, although in a slight degree, contributed to that improvement;—we have become gradually and deeply interested in the advance of that improvement;—and we have sworn, and we will keep the vow, to become the humble, but the willing, the devoted coadjutors of those who will labour to place our art on a scientific basis, and the uncompromising opponents of those who would recall or perpetuate the reign of ignorance and barbarism. We have suffered Mr. Webb to speak for himself; and he has convinced every reader that on no principle of science or humanity is his practice founded, and that such works as his must prolong the undeserved degradation of our profession.

He calls himself a veterinary surgeon. In what school did he study? We will answer unhesitatingly, neither in Edinburgh or St. Pancras, or the University of London: but the Morayshire Farmers' Club have conferred on him the title of veterinary surgeon; then their veterinary surgeon let him be.

We will not, however, part quite in anger, except on one point—the diabolical mixture for poll-evil; and there we should despise ourselves if we did not feel indignant. Mr. Webb has discarded that long and destructive list of cordials and stimulants which used to destroy more cattle than all their natural diseases put together; he has advocated the propriety of bleeding, largely and repeatedly, in inflammatory cases) we will not quarrel about the principle on which he goes—he shall get rid of so much vitiated and corrupted blood: we, too, have got so

much blood out of the circulation, and lessened the determination of what remains to the inflamed and surcharged part); and he usually follows up his bleeding by physic; he particularly recommends this in the inflammatory diseases to which calves are subject. We should certainly object to his doses, which are often altogether insufficient—we might almost say inert: three ounces of cream of tartar (!)—even in cases of staggers twelve ounces only of Glauber's salt, with two ounces each of salt of tartar (!) and Castile soap, and that divided into two doses. On the other hand, his doses of diuretics—nitre, in two and even three ounces at a time, are most outrageous. To his occasional treatment of the subsequent stages of disease we should object, especially where, after the influenza of cattle, he orders three ounces of powdered caraway-seeds, three ounces of aniseseed, and one of Peruvian bark and one of ginger, to be given daily: this is overcoming and destroying the debilitated power of nature by excess of stimulus. In his account of the management of breeding mares and cattle, and their young ones, there are some very good observations; but we must not have some of the worst doctrines of the old school revived; and theories, neither founded on anatomy or physiology, or experience or common sense, but wild, absurd, and dangerous, crammed down our throats, as they are again and again, "how contrary soever they may seem to be to our own ideas."

Y.

Extracts.

Horses in Ancient Times.

There is pretty good evidence for supposing, that, even at the time of the Trojan war, horses were but rare animals in Greece, and were possessed only by princes or great men, who employed them, not for the purposes of husbandry or draught, but for the ornamental displays of war and chariot drawing, as the proud and distinctive accompaniment of royalty alone. In Judea, horses were, till the days of Solomon, very rare. Egypt is always described in the Old Testament as the land of horses. The earliest notice of the horse is in the Book of Genesis (chap. xlvii, 17), where Joseph is said to have given the Egyptians "bread in exchange for their horses." In the very minute enumeration of the cattle stores of Abraham, Isaac, Esau, Laban, Job, &c., in the Book of Genesis, though there is a superabundance of other quadruped property, no mention whatever

is made of horses. Neither in the fourth or tenth commandments are horses noticed with the other working animals. In the enumeration, however, of the Egyptian cattle-property affected by the murrain, horses are mentioned in precedence of the rest. "Behold the hand of the Lord is upon thy cattle which is in the field, *upon the horses*, upon the asses, upon the camels, upon the oxen, and upon the sheep."—*Exod.* ix, 3. In like manner, in the excellent and very particular description given by Theocritus of the quadruped stock of Angias, the child of the Sun, who lived in the Peloponnesus, horses find no place. Even during the Trojan war these animals were only in the retinue of princes, and were always associated with cattle, or with the glorious forthcoming of kings. Accordingly, we find that in all the first descriptions of that animal, and particularly in that sublime and all-surpassing one in the Book of Job, he is depicted with beauty and majesty, as the war steed alone. Homer speaks of him always with dignity and admiration; and it is apparent, that in his conceptions, an additional respectability is conferred upon his princes and his war-grooms by the title which he bestows upon them of "horse-tamers" and "horse whippers"—a contemptible commendation, according to our ideas, associating, as we inevitably do, these epithets with the persons and mean employments of grooms of the stable and horse-jockeys. The ancient poets and ancient people must have connected, however, beauty, majesty, and sublimity, with their idea of that animal, not only from his noble shape and gallant appearance, but from his singularity, and consequently, high price—his being the friend, as it were, and attendant of princes—his being the terrible yet graceful accompaniment of war—and his being never seen, as in our modern times, degraded to the familiar yet far more beneficial purposes of draught in our streets, and husbandry in our fields. A modern reader, therefore, must enter somewhat into the sentiments and feelings of antiquity in order to perceive the beauty or propriety of Theocritus's comparison of Helen to a horse, or of Solomon's likening his love "to a company of horses in Pharaoh's chariots." The light in which the horse is thus considered as an ornament of royalty, or an appendage of war, not only ornamental but efficient, is explanatory of many passages not only in the Old Testament, but in the Greek and Latin classics. In the Psalms of David,

> An horse for preservation is
> But a deceitful thing.—Ps. xxxiii, 17.

And in Eccles. x, 7, "I have seen servants on horses." In Deuteronomy, chap. xvii, 16, Moses forbids the Israelites in the

event of their electing from among themselves a king, to allow him "to multiply to himself horses," and thereby foster a lust of dominion and belligerent propensities, at the same time also creating, what the lawgiver wished much to prevent, too frequent a communication with Egypt. Egypt was undoubtedly, in the most early times, the great breeder of horses: the Old Testament proves it by many references. At Jacob's funeral in Judea, there came forth from Egypt "chariots and horsemen, a very great company." The Hebrews were pursued into the Red Sea by Egyptian horsemen; horse and rider were there overwhelmed. Solomon, several centuries afterwards, obtained all his horses from Egypt. With this testimony concurs the account given by the Greek writers; according to them, Sesostris [or Sesonchosis, as others write his name] was the first who taught men to tame horses and to ride them. In Solomon's days the price of a single horse from Egypt was 150 shekels, which, according to Bishop Cumberland's calculation of the shekel*, is about £17 10s. of our money—a great sum in those times. In the days of Xenophon, 600 years later than Solomon, the price of a good horse was about 50 danks, or £27 10s.—at least such was the price paid by Senthes the Thracian to Xenophon for the steed whereon he rode during his retreat from Babylon. Next after the Egyptians, the Assyrians became the celebrated cavaliers of the ancient world. These people are repeatedly alluded to by the Jewish prophets, not only as excelling in the beauty of their horses and skill of their horsemen, but also in all the showy apparatus of equestrian garniture. Their proficiency, however, in this branch of the military art, took place long after the Egyptians had invented and brought it to some degree of perfection, while the Medes, Assyrians, and Persians, possessing more gold and silver, from their more enlarged empires, were decked and bespangled more with blue, with purple, and with gold, "clothing their horsemen most gorgeously." Persia became latterly most renowned for its horse-riding. Xenophon declares that, before the age of Cyrus, Persia had, from its want of wealth, or the mountainous character of its soil, no horses; but that, after his time, from the personal example, and encouragements, and recommendations of their king, every man in Persia rode on horseback; so much so, indeed, that it is understood that the very name of Persia, by which ever afterwards their country became known, was taken from PERESH, a word in Chaldee and Hebrew, signifying a

* If we take Xenophon's valuation of the shekel, as containing 7½ oboli, as stated in Lib. I of his Expedition of Cyrus, it makes the price much less, about £6 5s.

horseman. Immense numbers of these animals were reared in the plains of Assyria and Persia. We read in some author of no less than 150,000 feeding on one vast plain near the Caspian Gates. The Nysæan horses, which the kings of Persia used in their expeditions, were celebrated as the finest in the world. In Greece, the art of riding horses, and most probably the arrival of the horse himself, did not long precede the Trojan war. The story of the Centaurs, *semi-human horses and semi-equine men,* as Ovid calls them, warrants the inference that horses then first made their appearance in Thessaly, if not in Greece. These people lived about a century before the Trojan war; for Chiron, who was their chief, was the preceptor of Achilles. As the poor Mexicans at the first appearance of the Spanish cavalry ran off in a fright, conceiving that man and horse were but one animal, so the people of Thessaly fled, panic struck, at the sight of the double-shaped incomprehensible monster that charged them. It is almost certain that these Centaurs were a tribe of Pelasgi, or emigrants from Phrygia, and the southern shores of the Euxine Sea, which were occupied at an early period by a colony of Egyptians, planted there by Sesostris in his Phrygian and Scythian expedition. Confirmatory of this derivation, is the Grecian tradition, as recorded by the antiquaries, that Philyre, the mother of the Centaurs, cohabited with Saturn in Philyreis, an island near the southern shore of the Euxine; and that from that island she emigrated to Thessaly and the mountains of the Pelasgi. In this way, one might amuse himself by attempting to trace, even from the few data afforded by history, the circuit by which horses, with the consequent art of equestrian exercise, passed from Egypt, the original and central riding-school of the world, into Greece and into Europe. From Egypt they passed into Assyria and Persia; from Assyria to Cappadocia, Amazonia, and Pontus, countries where horses were most reared, most admired, and, as the most admirable objects in animated nature, offered up as sacrifices to the sun. From Pontus they passed, with the streams of westward-rushing population, to Phrygia and the southern banks of the Propontis; and from thence, with "horse-taming" Pelops and the Pelasgi, they migrated into Thessaly, and confounded with their novel and terrifying appearance the simple and aboriginal inhabitants, to whom "the horse and his rider" seemed a monster outlandish and inscrutable! It was not customary in these ancient times to shoe horses with iron, according to our modern practice; so that a strong hoof, "hard as brass" and solid "as the flint," was reckoned one of the good qualities of a steed. In oriental countries, the dryness of the roads rendered this fortification of the

hoof less necessary; the muddy ways and miriness of the ground's surface in the north of Europe, I suppose, first caused and confirmed the practice. Hannibal's cavalry, which were principally Numidian, lost all their hoofs in the miry and embarrassing march through the marshy ground between Trebia and Fesulæ. The horses of the ancients had no saddles*, no stirrups, and the Numidian horses had even no bridles; but their armour and their trappings must have compensated for these deficiencies by its extraordinary splendour.—*Tennant's Shreds of Antiquity.*

Hereditary Glanders, and the various Causes of that Disease.

By M. Lautour.

A mare that had been glandered four or five months produced a male foal on the 27th of April, 1831. From the moment that it was dropped, two indurated glands, not adherent, were observed on the internal face of the inferior maxillary bones, and a yellow fluid was discharged from the right nostril. Ten days afterwards small ulcers were perceived on the nasal membrane on the same side. The animal was suckled by its mother, and, with these exceptions, appeared to be in perfect health.

During two months it continued in the same state; but in the third and fourth month, the breathing through the right nostril could be distinctly heard, and became louder after exercise. The appetite and spirits, however, were not diminished.

The mare was killed in October, and the colt in the following December. The following is an account of the appearances after death.

The lymphatic ganglions of the mesentery had degenerated into tubercles, the size of which was somewhat various. Some portions of the mesentery participated in the same disorganization. The abdominal cavity contained four or five pints of yellow serous fluid. Every thing announced a sub-inflammatory state; but the redness of intense inflammation was nowhere seen.

The bronchial ganglions presented some indurations; but not to so great a degree as in the abdominal cavity: with this exception, the thoracic viscera were sound.

The left nasal cavity presented nothing particular; but on the right side, the frontal and maxillary sinuses were the seat of extensive ulceration: the turbinated bones were almost destroyed; their bony structure was softened and denuded, and the mucous

* Yet I find saddles mentioned in our translation of the Bible, Leviticus xv, 9; and in Num. xxii, 21, Balaam *saddled* his ass.

membrane was replaced, here and there, by a kind of vegetation, like transparent ice, with a slightly green colour. There were eight of these morbid productions, which varied in size from a small gall-nut to that of a kidney-bean. The superior extremity of this cavity contained a polypous production, three or four inches long, resembling a pear. The membrane which covered it was soft and thick; and on their being scarified a small quantity of white fluid escaped.

The septum presented almost innumerable small ulcerations, but which scarcely penetrated the mucous tissue.

This case is far from proving that glanders is contagious; but certainly shews that it may be hereditary. The affection proceeds from the influence of a vititiated nutrition; for the fœtus, being an integrant part of the mother, is indebted for its development to products less elaborated and healthy, in proportion as the chief viscera of the mother have advanced in disorganization.

There is no doubt, that we may recognize in the mesenteric and bronchial indurations of this animal the first principle of the disease, and whose morbid state was afterwards extended sympathetically to the pituitary membrane; for, when the irritation is once developed, it is capable of propagating itself indefinitely, and of attacking successively the principal viscera, and affecting them with greater or less intensity, without, for all that, losing its insidious character. It is a Proteus which can assume every possible form, and elude the closest investigation, and lead us to commit the grossest errors, when, as in many cases, the lesion of an important organ is only developed by mere sympathetic phenomena.

There is no doubt that glanders is often occasioned by an irritation, more or less developed, of the respiratory organs contained in the chest; and it has already been seen, that it may afterwards develope itself in inflammation of the intestinal canal. In proof of this last assertion, I may refer to a case which I had the opportunity of inspecting in November 1830. A colt, eighteen months old, had during three or four months been rapidly losing condition; it was then seized with intermittent colic, preceded by violent enteritis, complicated with tetanus and trismus, with discharge from the left nostril, and enlargement and induration of the submaxillary ganglions, and which complication of disease soon terminated in death. The most serious disease was found in the digestive canal, and particularly in the small intestines, which contained about four hundred strongyli. The pituitary membrane was ulcerated through its whole extent.

It is easy to see that the pathological state of the digestive canal had continued for a considerable period; this was proved by the intermittent colic, and the gradual loss of condition. Later, the visceral disorganization interfered with the exercise of some of the principal functions, and hence arose the morbid sympathy which was the exciting cause of tetanus; wherefore, then, shall we not attribute to the same cause the disorganization of the nasal membrane?

The general causes of glanders, in my opinion, are—

1*st*. The living in stables badly ventilated, low, and dirty. Deleterious emanations, which the animal is obliged to breathe, and which irritate the respiratory passages, and predispose them to be affected with glanders from the slightest occasional causes.

2*d*. The sequelæ of irritation; not only those just hinted at, but also produced by sudden alternation from cold to heat. In this case, if the inflammation attacks the pituitary membrane, it soon loses its acute character, and passes into a sub-inflammatory state, disorganizing more or less slowly the tissue which it attacks. On the other hand, if the inflammation affects the mucous membrane of the bronchi, the irritation at length reaches the nasal membrane by extending along the continuous surface, and produces glanders, and which, thus produced, is always incurable.

3*d*. When over-work or insufficient or bad food have reduced the animal economy to a state of complete decay, we see a slight nasal discharge first produced, and which progressively increases in proportion as the exciting cause acquires greater power, or the animal, by his natural organization, is disposed to be acted upon by its fatal influence.

Journal Theor. et Pratique, 1833, *p.* 14.

We translate this paper because it contains two important facts; because, also, it gives us a glimpse of the notions generally entertained by our continental brethren on the subject of glanders; and, lastly, because it is a curious illustration of the folly of theorizing on a few facts, and of the facility with which many a false and absurd induction is often drawn from very insufficient premises, or premises which have no existence except in the mind of the theorizer.—EDIT.

Miscellanea.

Lieutenant James's Reply to the Editors of "The Veterinarian."

"There are more things in heaven and earth, Horatio,
Than are dream't of in your philosophy."

In your last number (the first I ever saw), of the "Monthly Journal of Veterinary Science," you have done me the honour to notice my blister ointment, for which I return you my thanks: the "*audi alteram partem*" will, of course, induce you once more so far to degrade the Journal as to give your readers my reply. It appears, then, that, "like all these pretended discoveries, it is no discovery at all." How singularly applicable is that sentence to the result of your own labours! You have pretended to a discovery, but your exposition of it is so vague and unsatisfactory, that I shall be surprised if your readers, or your pupils, or, indeed, any one else, should venture upon an imitation of my blister, and put it to the *same tests* from so undefined a recipe, as, that it contains *more* of this, *less* of that, and *plenty* of the other ingredients, which you have discovered to be in it, although you admit "its value" consists in being free from many "devilish ingredients:"doubtless it would have been more satisfactory if you had stated that your discovery produced the same effects. The public very naturally expect from Professors, supposed *ex vi termini* to possess a superiority of talent over the common herd of their profession moving in more humble spheres, obscured by, and content to struggle on under, the shadow of such great names, and to adopt or reject whatever they may recommend or condemn, would, at least, so far aid the humble labours of such of their dependants as, in this case, to make known to them a blister which

No horse will gnaw;
Will not touch the human hand;
Will never blemish, however frequently applied;
Re-produces the hair generally in ten days;
May be used in the ratio of three to one to any other known blister;

with this additional qualification, that the animal, in most cases,

May continue his accustomed labour.

As you have omitted to state the relative component parts of

my blister, and that your discovery will produce the same effect, you must excuse my being a little sceptical on that point, and, for other reasons, adding my conviction, that you have entirely failed in the attempt. But why have you passed over the numerous well-authenticated cases of cure? Surely, on the score of science they cannot be unworthy the notice of professors, or beneath their inquiry. Have you not seen that a surgeon of eminence has borne written testimony to its great and powerful efficacy? The same gentleman, *cum multis aliis* of that profession, has expressed his astonishment at its instantaneous effect upon the horse, whilst it is inoperative on the human hand, and thinks it a "devilish" unaccountable thing. That you have tried its operation there can be no doubt; why you have remained silent on its effect is obvious.

I know that several veterinary surgeons, men of liberality and judgment, friends to the profession, ardently wishing to raise it to that level in the scale of science which it ought to occupy, have used, and not only highly approved my blister, but have candidly acknowledged its superiority over any other composition of the same nature. Every originator of a discovery, particularly when it entrenches on the profits, or places the talents of others somewhat in the shade, must expect attacks; fair and open criticisms promote and lead to new discoveries, particularly when professors have not the fear before their eyes of lessening the dignity of their stations by fairly investigating all new subjects pertaining to their particular science, from whatever source they may emanate; and I would recommend you to lay aside all prejudice, all fear of degradation, and persevere in your analysis; for if you should ultimately fail in a discovery you so much long for (and at present there is a wide difference between you and an eminent Parisian chemist of the component parts of my blister), you may accomplish something of still greater benefit to the science of which you are professors, and, of course, distinguished ornaments.

22d May, 1834.

We have thus inserted Lieut. James's reply, although he had forfeited his claim to it by hawking about that reply, advertisement like, among the editors of other journals. We laughed heartily at the adroitness—the perfect nonchalance—with which, in other *direct* advertisements, he has turned our censure to his own account: verily, this Lieut. James is an admirable tactitian, and will become a General in due time!—Y.

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MR. YOUATT'S VETERINARY LECTURES,

DELIVERED AT THE UNIVERSITY OF LONDON.

LECTURE XLIII.

The Seventh Pair of Nerves—their Double Origin and Function—The Sympathetic or Great Organic Nerve—its Origin—Universal Connexion—presiding over the Functions of Nutrition, Secretion, &c.

WE are now prepared for the consideration of the seventh pair of nerves, or, as it has been strangely called, the *portio dura* of the seventh, as if it were not essentially distinct from the auditory nerve in origin, structure, course, and function.

Its Double Origin.—There needs only a moment's inspection to convince you that this nerve arises from two distinct roots; one from the central column of the medulla oblongata or inferior surface of the spinal chord, and the other from the side of the compressed corpus olivare, or what we should have termed the corpus restiforme or lateral column in the human being. We can plainly trace the superficial course of the inferior portion across the medulla oblongata, and parallel with the pons varolii, and separated from it by a little sulcus; and the nerve, or the inferior portion of the nerve, is the evident prolongation of this medullary chord. With a little trouble we can dissect away and turn over this inferior portion of the nerve, and then we have other fibres as plainly springing from the side of the medulla oblongata, running parallel with the first, comprised with them in one common sheath, and combining to form the seventh nerve.

Structure of the Nerve.—Minute anatomists have spoken, and with perfect truth, of the difference in the internal structure of different nerves. This is sufficiently plain in the larger nerves. The continuation, as it were, of the pulpy matter of the brain in the nerves of pure sensation—the distinct filaments of the fifth pair—the single furrowed chord of the cerebro-visceral, are well known; so in this seventh pair, and chiefly in the inferior portion of it, the fibres of which it is composed can be traced without the aid of a lens, and also the minute filaments

running from one to another, and giving to the whole a plexus-like appearance. This is a division of minute anatomy which has been hitherto neglected. Considering the greater devolopment of the nerves, both animal and organic, in our patients, we have superior opportunities for inquiring into it; and when we have a little emerged from that obscurity or disrepute under which the students of veterinary medicine have hitherto laboured, the possible connexion between the structure and the function of the nerves may be one subject, and far from being the most important one, that may be entrusted to our research; and, if it should hereafter appear that our practice is based on anatomical facts, and strict physiological deductions, and close observance of their bearing on disease, the pathology of domesticated animals will be acknowledged to be one of the most useful auxiliaries in the study of human medicine.

The Course of the Seventh Nerve.—This nerve emerges from the skull through the meatus auditorius internus, inclosed in the same sheath with the eighth pair (the portio mollis or auditory nerve). The eighth soon runs its course, as already described; but the seventh, when passing through the spiral canal in the temporal bone, and at the bottom of the meatus, gives off two important branches, somewhat differing from those, described by human anatomists. The first answers nearly to the *chorda tympani* or nerve of the tympanum, for it passes across that cavity, and along the handle of the malleus, or rather between it and the incus; it then escapes from the tympanum through a small foramen appropriated to this purpose, descends towards the tongue, and unites with the lingual nerve. The other branch also passes through the extremity of the tympanum —it follows the direction of the eustachian tube—anastomoses with the vidian nerve of the fifth pair, traverses the suboccipital ganglion, and, deeply seated beneath the temporal bone after its escape through a foramen in the sphenoid bone, it distributes its ramifications over the neighbouring parts.

The main trunk of the nerve, passing from the spiral canal, is found behind the condyle of the lower jaw; and there it first assumes the character of a kind of gangliform plexus, and ramifies into various branches. Three go to the different parts of the ear,—the *anterior* branch supplies the muscles of the anterior part of the ear, constitutes another plexus before and at the base of the scutiform cartilage, anastomoses with the lachrymal branch of the ophthalmic nerve, and loses itself in the neighbouring integument and muscles;—the *posterior* auricular goes to the back of the ear, and supplies the muscles and integument there; while the *internal* auricular enters the conch, and ramifies

over it. There are various parotideal branches which lose themselves in the upper part of the parotid gland, and the integument over it. And now, the main trunk of the eighth nerve, joined by a branch from the posterior maxillary nerve, emerges from the parotid gland, turns round the cervix of the jaw, and appears upon the outside of the temporal artery. This is the place where it has usually been divided for experiments on it as the motor nerve of the face. The beating of the artery will always guide you to it. It now becomes the proper facial nerve. Its branches reach to every part of the face, from the forehead to the extremity of the muzzle; while some of them, taking a descending as well as posterior course, unite with the cerebro-visceral, the spinal accessory, the great organic, and the first and second cervical nerves.

Difference of Distribution.—There is a considerable difference in the distribution of the facial branches in different animals, and that depending upon the variety of the motions of the lips, or the powerful action of the muscles of the jaw and neck. Observe in the horse the profuse distribution of the nerve about the nostrils and the muzzle, accounting for the beautiful play of the nostril in the blood-horse, and the varied action of his lips and muzzle—the principal seat of the sense of touch in him. Next observe the far fewer branches in the dog, whose lips and the alæ of whose nostrils have comparatively little motion, and the plexus of ramifications going to the muscles of the jaw and even of the neck, which are concerned in the various and powerful action of the jaws, and the motions of the head generally, and of the neck. Again, observe the multiplicity of fibrils directed to the ear of the horse, compared with the same part of other animals, illustrating the varied play and the speaking action of the ear in this noble animal.

The Function of the Nerve.—I know that the seventh is the voluntary motor nerve of the face—of that there can be no doubt. The motions of the head—the action of almost every part of the face—the expression of the countenance, depend partly or entirely on the influence of the seventh nerve; and all the muscles of the face, the head, and the external part of the neck, are perfectly under the command of the will. A great many of the muscles of the face, however, are connected with the discharge of the organic functions—voluntarily, so far as mastication is concerned—voluntarily in many an occasional act connected with respiration, as coughing, sneezing, sighing, talking: but involuntarily and unconsciously in the common process of breathing; and involuntarily and violently, yet consciously, in the deep and rapid breathing of exercise or disease.

The double origin of the seventh nerve, from the central inferior, and lateral column of the medulla oblongata, enables me to account for all this with tolerable satisfaction. From the motor column I derive the power of voluntary action; from the lateral column, the involuntary action of some of the muscles in the performance of an organic function, and that varying to a considerable degree, according as circumstances may require; and from the union of both, I have the power of exciting those muscles to more energetic and more widely combined action, for the discharge of this function when I please, or under circumstances of difficulty or disease. It is like the combination of the spinal accessory with the nerves of voluntary motion from the spinal chord, and which causes certain muscles of the neck and shoulder to be either subservient to the will, or unconsciously employed in respiration, or both, as circumstances may demand; but the two roots, or sources of nervous influence, are here brought nearer together. I acknowledge, gentlemen, that this is a somewhat new view of the character and function of the seventh nerve. The double origin you cannot deny; the function of the nerves, from the inferior central and from the lateral column, seems to be tolerably well established; and it will be for you to inquire what better explanation you can give of the office of a nerve springing from both these columns.

The Upper Cervical Ganglion.—At the base of the cranium, beneath, and in front of the atlas, we find a pyriform reddish body, of a somewhat soft consistence, and differing in bulk in various animals. It gradually contracts as it proceeds down the neck, and at length terminates in a cord or nerve. In the horse it is scarcely an inch in length before it has diminished to a mere cord—in the human being it is said to extend from the skull to the transverse process of the third vertebra. Before it takes on the character of a cord or nerve, it either sends numerous filaments to neighbouring and even distant parts, or it receives them, or both, and particularly as it regards the cranial and spinal nerves.

There is a communication with the sixth pair, but not of that important character that some have represented. A branch of the great organic was ramifying, or forming a nervous plexus over the carotid artery within the cavernous sinus; the sixth nerve passes over the artery at the same place:—the two nerves come in contact with each other—they exchange several fibres, and then both of them continue their course. Professor Mayo has given a very satisfactory representation of this in his outlines of human physiology. There are two communications with the fifth pair, and of the same character, and accompanied by an

exchange of fibres;—one through the medium of the suboccipital ganglion, and the other within the foramen lacerum.

It is the Head or Source of the Nerve.—I cannot, then, bring myself to believe that it springs from the fifth and sixth pairs, or that it is a collection of branches from them, and, by-and-by, from almost every nerve of the frame. A minute dissection of these communications will prove, that there was a nerve previously existing with which the others anastomose; and that it is not one nerve giving origin to the other, but a fair interchange of fibrils and of influence for some important purpose. Both the fifth and the sixth nerves receive as much as they give: I am therefore disposed to regard this ganglion as the commencement of the great organic nerve. I feel a difficulty about it. Ganglions are generally found in the course of nerves, and do not form their head or source. This is an unique instance of a ganglion constituting the origin, although perhaps we have something like it in the origin of the organic motor nerves from that rounded, ganglion-shaped portion of medullary matter, the corpus olivare. There needs some master mind to give us a comprehensive and satisfactory view of this portion of the organic system. It would be worthy of that great physiologist to whom we already owe so much, and a noble completion of his labours.

The Course and Ramifications of the Great Organic Nerve.—I will then suppose that this ganglion is the head or commencement of the great organic nerve. There are, first, its ramifications to the suboccipital ganglion, and thence to all its wide connexions. There is the branch which enters the cranium through the foramen lacerum; as it passes through, a filament is given to the cavity of the tympanum, and so to the seventh pair (the portio dura), and also to the cerebro-visceral; and, still climbing up, I have said that it forms a plexus or ganglion or both. It is a firm body, but enveloped with a meshwork of nervous fibrils, a *rete mirabile*, covering the carotid artery, and where it has the communication which I have described with the sixth, and whence proceed several other little filaments to the fifth. We no sooner begin to trace the ganglion, and the nerve in which it terminates, than we are made aware of that which gave it the name of the great sympathetic: it is connecting itself with everything; we can trace it to the laryngeal branch of the spino-cerebral, the glosso-pharyngeus, the spinal accessory, the first and the second cervical. In fact, we shall find that it communicates with every nerve by which it passes, and exchanges fibres with each—it gives fibres to and receives them from both roots, but chiefly the motor root.

This Nerve given especially to the Arteries.—But now appears a new feature in nervous ramifications. We have seen anastomoses between different nerves, or branches of the same nerve; we have seen the nerves ramify upon and lose themselves in the substance of muscles; but the fibriculi of this nerve are principally distributed over the arteries. We see it here beautifully. When they reach the arteries, they form plexuses, net-works, and, combining with some interposed cellular substance, perfect nervous tunics around the vessels. The substance of the nerve is pulpy—its neurilema or sheath is delicate—there is a kind of transparency about it; and, therefore, although these nerves are visible enough on the larger vessels, and can be traced even on the smaller, we at length lose them, not because they cease to exist, but because, from their peculiar structure, we are no longer able to follow them. We have hitherto had nerves spreading over certain membranes, and devoted to peculiar sensation; or ramifying over the locomotive portion of the frame generally, and connected with common sensation; or over muscles, and connected with motion, voluntary or involuntary: but here is a nerve identifying itself, indeed, with every other, but peculiarly *the nerve of the bloodvessels,* covering them as with a tunic, and connected in some mysterious way with their action. This is a singular circumstance, and to which I shall recall your attention by-and-by.

Connected with all the main Arteries.—It is found at its commencement thus encircling the internal carotid, and can be traced, for a certain distance, on all its branches. It covers in the same manner the beginning of the external carotid, and can be followed over the main arteries of the neck, and the face, and the glands.

Course down the Neck.—The ganglion grows smaller, and ends in a nervous chord. *The great organic* I have ventured to call it, and the reason for which will presently be more apparent. It now unites itself with the cerebro-visceral, and passes down the neck in the same sheath with it, and lying between the carotid and the cerebro-visceral, and therefore, for any experiment, clearly distinguishable by this peculiarity of situation, by its being the smaller nerve of the two, and of a redder hue, and a more pulpy substance. As it pursues its course, there are frequent anastomoses between these nerves, and also very small filaments from the lower cervical nerves. When we reach the base of the neck, it communicates with the recurrent nerve.

It enters the Thorax.—As it approaches the thorax, and when entering into it, its net-work investing connexion with the arteries becomes again more evident; it may be seen surrounding

the vertebral artery, and more particularly the axillary artery, on the trunk of which it cannot be mistaken, and on the branches of which it may be long followed. It begins also to be more evident on the carotids, and forms on them numerous plexuses, interspersed with ganglions, and which seem to be the sources of new radiations; and these run along the great vessels to the heart.

The Posterior Cervical Ganglion.—As it enters the thorax, or under the first dorsal vertebra, this nerve enlarges again, but not to the same degree as at the superior ganglion. Here we briefly trace some important branches—one of considerable size to the seventh (sixth) cervical nerve, not, as our best veterinary anatomist asserts, on account of "the mediate connexion which it thus has with the five anterior cervical nerves," because it has had direct communication with them in its passage down the neck; but because a plexus of spinal nerves is here beginning to be formed for the supply of the fore extremities, and this nerve is called upon to contribute its influence whatever it may be. There are branches to the last cervical—to the first and second dorsals—a plexus about the root of the trachea—fibrils to the œsophagus—more to the recurrent, and, chief of all, the cardiac plexus, given to, and plainly ramifying over, the great vessels of the heart. I have not time to enumerate the ramifications and plexuses which are here formed; they are so numerous and complicated, that no vessel, of the heart or lungs, or even any portion of a vessel, should be without this nervous tunic.

Division within the Thorax.—All these are ramifications from this nerve, the trunk of which has entered the thorax, and runs along the spine under the articulations of the ribs; but it soon divides on each side. The proper great organic pursues its course under the articulations of the vertebræ; and, between the heads of each rib, it swells out into a small ganglion, from each of which filaments proceed to the intercostal nerve, going principally to the motor branch of it, and receiving filaments from it: and thus it reaches the diaphragm, under the crus of which it passes into the abdominal cavity.

The Splanchnic Nerve.—Varying in different subjects, fibres begin to be given off from the trunk of the great organic nerve about the 5th, 6th, and 7th rib; and these unite and form a considerable branch on each side, which descends some distance from the spine, and pursues its course over the ribs, and under the pleura, to the diaphragm, and bearing the name of the *greater splanchnic nerve*. It also enters the abdomen under the crus of the diaphragm. Another smaller branch is given off

from the great organic, while it is running along the crus of the diaphragm, and which, after turning backwards, and describing a kind of arch, also enters the abdomen.

The great Organic in the Abdomen.—The main trunk of this nerve continues in the abdomen close to the transverse processes of the vertebræ, and, gradually creeping up the sides of the vertebræ as we proceed backward along the loins, it pursues its course to the pelvis. Opposite to each lumbar nerve a ganglion is formed, and from it two little branches are given off: one anastomoses with the lumbar nerve on the same side, and the other either creeps under the aorta and unites itself to the corresponding branch on the opposite side, or climbs over the aorta, mingling with the net-work of nervous matter from the organic nerve, and which has been continued along the whole course of the vessel, and then, emerging from this plexus, it joins its fellow on the opposite side of the spine. When we reach the pelvis, the great organic still continues its path along the sacrum, forming the same kind of ganglia, and communicating with the sacral nerve on the same side, and with the branch of the organic on the other side, and that through the medium of dense interposed nervous plexuses. Having passed the sacrum, the nerve rapidly diminishes: it runs under the peritoneum for a little way, and then, reduced to extreme minuteness and thinness, it disappears; and, as some tell us, in a ganglion, formed by the union of the two nerves, which describe a kind of arch to meet each other.

The Splanchnics in the Abdomen.—The splanchnic nerves, having entered the abdomen, bend suddenly downward, and form the principal portion of the semilunar ganglion. A part of the lesser splanchnic is devoted to the same purpose, while another branch of it goes on and enters into the renal plexus. I have already stated, that the cerebro-visceral and the phrenic nerves contribute important branches to the same ganglion.

The Semilunar Ganglion.—Under the posterior aorta, at the root of the cœliac artery, and occupying the space between the cœliac and the anterior mesenteric arteries, the splanchnics, the left branch of the cerebro-visceral, and a branch from the phrenic, meet, and form what has been called the *semilunar ganglion*,

> **If shape it might be called, that shape had none**
> **Distinguishable;—**
> **Or substance might be called, that shadow seemed,**
> **For each seemed either.**

As these nerves approach each other, they lose their individual form and character; they diffuse themselves into numerous filaments, uniting again to form distinct ganglia; and these matted

together and surrounding each other, now blending together, and now separating, then with strange confusion crossing each other in every direction, so that we have scarcely passed the border of this congeries of nerves, when we cease to be able to follow either of the contributory branches, and have only the mingled substance of all. This ganglion, or collection of ganglia, has no determinate shape in any of the domesticated animals; except that you may trace a somewhat convex border posteriorly, and one more concave anteriorly in the direction whence the contributing branches came, and thus forming a rude kind of crescent. From the convex border of this lunar, I would rather call it solar plexus, there are divergent filaments of different consistence and size, and some of them minute, filmy, "shadowy." These are rays, radiations of nervous influence yet strangely mingling and interweaving with each other, and combining the properties and the powers of the different principles of organic life. Therefore we no longer speak of particular nerves, or branches of nerves, but of plexuses; and we give them a name from the viscus or part to which they are directed. I will not detain you by describing all of them, but I would urge you to follow them in some slow and careful dissection, and observe how every viscus and every portion of the organic system which the abdomen contains lives and acts by influence derived from this central sun.

The different Plexuses from the Semilunar Ganglion.—The names and the connexions of some of these plexuses I must briefly run over. *The anterior mesenteric* I find upon the root of the anterior mesenteric artery. As the ganglion was composed principally from the great organic, so it retains the character of that nerve in the mode of its distribution. Whatever may be the ultimate destination or function of some of the fibrils, we find the plexus on an artery, not merely running along it like a motor or a sensitive nerve, but forming a tunic around it, penetrating it at every assignable point, and becoming, as it were, a portion and a part of it. We find this plexus first on the root of the anterior mesenteric artery; and composed, too, not merely of fibres from the semilunar ganglion, but from the lumbar nerves. The plexus pursues the course of the artery—accompanies all its branches—radiates on every side—spreads over the mesentery—encircles the various glands—reaches the small intestines—penetrates with the bloodvessels through their parietes, and ramifies on their internal surface. Other branches of this plexus I can trace to the cœcum and the cœcal portion of the colon.

The Posterior Mesenteric Plexuses.—I have never lost sight

of the plexus which thickly covers the large bloodvessels in every portion of their course. The posterior aorta is now more richly supplied, and I trace ramifications from it over that part of the colon which the anterior plexus had not reached; and to the mesocolon with all its glands; and to the rectum: and here is a reinforcement of nervous power from the branches of the great organic, which I described as still continued along the abdomen, after the splanchnics had formed the semilunar ganglion. Connected also with this plexus are fibres from the lumbar and sacral neves.

The Renal and Spermatic Plexuses.—Hence I might trace the plexus to the kidneys, reinforced by filaments from the lesser splanchnic; and I might shew it to you winding round the origins of the emulgent arteries, and penetrating with them into the very substance of the kidney, and continued even over the ureters; and, continuous with the renal, the *spermatic* plexus, diffused over all the organs of reproduction.

The Hepatic Plexus.—I will mention only one plexus more, the *hepatic,* seemingly one of great importance. I first find it around the root of the hepatic artery; and trace it about that vessel in its course to the liver, transmitting, however, as it goes along, filaments to the phrenic arteries or those of the diaphragm, and also to the stomach and the pancreas; and then dividing into two collections of complicated branches, the *right* and the *left* hepatic plexuses. I follow the first over the right hepatic artery, and the vena portæ, and the biliary ducts, and the gall-bladder; and some fibres of it are branching off and going to the lower orifice of the stomach, and uniting with the cerebro-visceral, and proceeding with it down the duodenum. The *left* plexus I can also follow to the liver, and through the ramifications of all the vessels of that gland; and I trace it on to the cardiac orifice of the stomach, and observe its anastomosis or identification with the cerebro-visceral here; but all this, gentlemen, and by some abler anatomist (for I am now too old for that portion of my labour), will, at some not distant time, be better demonstrated to the veterinary class: until then I would urge you, with anxious and profitable care to trace this out for yourselves. You may not be able to unravel all the intricacies of the plexuses; but the grand thing will be sufficiently plain, that from this central combination of the influence and power of all the organic nerves, every abdominal and pelvic organ and vessel is supplied.

The Inquiry into the Function of the great Organic somewhat unsatisfactory.—And now, gentlemen, comes the most fearful part of my subject, the function of this last of the organic nerves. I cannot forget what Magendie has so truly said, that "suppo-

sitions, hypotheses, opinions, are all that the works of physiologists have hitherto presented upon a question the most interesting of all physiology;" and that, "it would be wiser and more conducive to the advancement of science to confess that, at the present, the use of the sympathetic nerve is unknown." It is unknown—it has not been experimentally proved. I am inclined to believe that it never can be. There is such a chain of intercommunication and connexion between the branches of this nerve and of every other—such a continuous plexus, if I may so term it—that we know not where or how we shall totally destroy its influence on any part. Experiment may go some way, but after all we shall be principally left to deductions from what we know of other nerves, and what they effect, and what they have left perfectly unaccomplished. This, I feel, is unsatisfactory, but, at least, it will teach us caution in drawing our conclusions, and diffidence in the statement and defence of our opinions. Some opinion, however, we must form, or we shall be perfectly at sea on many an important point of physiology and practice. That opinion will be confirmed, or corrected, or overthrown, by the result of future experiments. It may prove, as Magendie sarcastically observes, "*a jeu d'esprit;*" but we could tell him, that, in the conducting of experiments on subjects like these, there are so many circumstances to be taken into consideration, and so many unforeseen and unobserved causes of error, that the conclusion from them, and a long course of them too, if we could divest them of their barbarity, is a more veritable *jeu d'esprit* than any opinions that are grounded on a slow and careful advance from what we do know, to that which we wish to ascertain.

The Function of the Great Organic continued.—I have endeavoured, how satisfactorily you must judge, to determine the function of the nerves derived from the lateral column of the spinal chord; and the result has been, that they are *organic* nerves: and, as being uniformly lost on some muscular expansion, they are *motor organic* nerves: guiding the mechanism and effecting the movements of the great machine, either totally independent of the will, as in the discharge of the natural function of the different organs; or by constraining the voluntary muscles to assist or repress the action of the involuntary, when our "comfort or accommodation," or when the ravages of disease, or the preservation of life, require it. Thus the heart beats and the lungs heave, and the peristaltic motion of the stomach and intestines is carried on. But is this the whole of organic life? No; it is only a part, and a very inferior one; it is the mechanical part. The food would in vain traverse the stomach, and be

propelled through the intestinal canal, if there were not a power by which it is dissolved and changed, and its valuable parts separated, and prepared to become blood. The arterialization of that blood is a mere mechanical and chemical affair. It is exposed to the action of the atmosphere, and it undergoes a change for which the simple principles of chemistry will enable us to account: but, thus arterialized, it would permeate the greater and the lesser vessels to no purpose, if there were not a power by which, in the minuter capillaries, it is assimilated into the substance of the frame, and many a strangely varied secretion is performed. This is the power for which we are now seeking. No beautiful adjustment of various parts, no exquisite consent of motion between them, can accomplish this. No chemistry will here avail; we may trace its agency to a certain extent, but as we proceed we find its most invariable and energetic laws suspended—subverted. There is a principle still wanting. We must not look for it in the brain: if the mere mechanical part of organic life was in a manner independent of the will (at least in its most essential function it was so), this most important portion of organic life must be perfectly so: and so it is. Not only are we unconscious of the solution and chylification of the food, and the performance of the various secretions, but let every mental "agent" be "bent up" to the terrible feat of arresting or materially interfering with the organic process, we should be perfectly powerless. Where, then, shall we go?

It is the Nutritive or Secretory Nerve.—There is a nerve, the function of which we have not yet determined—the sympathetic or great organic nerve. On what tissue are its ramifications chiefly expended? It is scarcely found ere it is forming complicated plexuses on every neighbouring bloodvessel; it is so even within the cavernous sinus; it is enclosing the carotids, external and internal, with a kind of nervous tunic. I trace it round the temporal to the face and head, and also on every subdivision of the carotid, until, from the minuteness of the vessel; and the pulpiness of the nerve, it eludes my sight. I trace it into the thorax, and its ramifications are given to large bloodvessels there: I can follow it in the branching of every vessel; and, in the very substance of the viscus, filaments or plexuses of the organic nerve accompany the tube. I examine its course when it enters the abdominal cavity, and there too it is on the roots of the different arteries that the plexus is first observed, and it accompanies the ramifications of each artery to its ultimate destination. Where it ceases I know not. That it accompanies and envelopes the capillaries I dare not affirm; but as I gradually lose it through want of visual power to pursue it,

I think it probable that it does accompany and envelop them; and for want of any better or any other visible agent—for want of any other explanation of its influence over the vessels to which it seems so exclusively directed, I attribute to its agency the most important functions of organic life, nutrition, secretion, and absorption.

Its Anastomoses.—But I perceive another character about this nerve—its anastomosis with every other nerve in the frame, beginning within the cranium, and terminating on the coccygean vertebræ. A singular kind of anastomosis it is, imparting a portion of itself, and receiving fibres from both the roots of the cerebral and spinal nerves, but most of all from the motor. I cannot conceive of the existence of any secretion which does not imply sensibility in the secreting vessels, and some power exerted in order that an effect may be produced. The gland, or the vessels of the gland, must be conscious of the presence of the substance to be operated upon, and of the accomplishment of that effect; and the vessels themselves cannot be palsied and motionless while the effect is producing. Therefore I have the few sensitive fibrils, but derived from every nerve, for everywhere these secretions are going on. The power of these fibrils, by their connexion with the organic ones, may be so modified, that I shall have the organic sensibility I want, without that animal feeling which would bring the operation too much under the influence of the mind. I have more motor fibrils; for when I look over the frame, I have enough for these secerning vessels to accomplish. And then, for aught I know, when fibrils from the organic nerve are communicated to every spinal one, it may be to add, as it were, a third set of filaments to the two of which it was already composed; and in addition to sensation and the power of motion, to bestow the faculty of secretion, or to assist the discharge of it, in places out of and far away from the thorax or the abdomen.

The Influence of the Nerves on the Secretions.—Have I any experiments to refer to in corroboration of this?

There are said to be experiments against this hypothesis. The great organic nerve has been divided in the neck, and no perceptible effect followed. I am not aware of the history of these experiments, or the time that elapsed before the animal died, or the physiological fact supposed to be ascertained; but I must refer again to the innumerable anastomoses which seem to render it difficult or impossible to cut off the influence of this nerve from any other nerve or organ; and I must also observe, that the effects of the suspension of the functions of this nerve would not immediately develop themselves. If the par vagum is di-

vided, the animal comparatively soon dies. Respiration is a vital action, and must not be long disturbed, nor at any time suspended; but any or almost all of the secretions may be for a long time suspended, and there will be no apparent distress or irregularity to mark the evil. The true answer however is, that these anastomoses render it difficult or impossible to cut off the influence of the nerve from any organ.

If, however, I have no experiments, I have many facts elucidating the power of the nerves over the secretions. My illustrations are very simple ones. The secretion of tears from mental emotion would be my first, if I were speaking of the human being: but the deer will weep; and I have seen the tears trickle down the cheek of the horse and the dog. The saliva running from the mouth of the hungry dog watching impatiently for his food; the obstinate retention of the milk by the cow, until after her calf is supplied (for when the dairy-maid has wrung the last drop she can extract, the mother has retained more than enough for her offspring); these things shew that the cerebral or spinal nerves not only are concerned in the act of secretion, but, in some rare cases, and they are rare, they are brought under the direct influence of the mind. Need I speak of the effect of the mind on the motions of all the visceral organs, and more particularly on the nature and quality of the secretions; or of the long train of sympathies which exist between various parts of the organic and animal system? Why should worms in the intestinal canal of the dog produce fits; and staggers in the horse, amaurosis? Why should one morsel of hay and a drop of water invigorate the whole frame of the tired post-horse, or a poison taken into the stomach produce instant death? It is the result of this connected chain of nervous influence. But what has this to do with the great organic nerve? Why, it is the only nerve that has been traced to many of the seats of these sympathies; it is the only nerve that has been traced to many of the glands; and the only one which, attaching itself to the bloodvessels, seems to be pursuing its course, and can be followed, so far as our sight will permit, to the main secreting organs, the capillary vessels.

I am detaining you beyond the accustomed time; but I must say one word of the function of this nerve within the abdomen. In the semilunar ganglion it has united itself to a portion of the cerebro-visceral and the phrenic. Let me recall to your recollection one viscus, the stomach, in which the effect of two of them was plainly distinct. The cerebro-visceral was divided; chyle was still produced. The food was partially digested; but, for want of the peristaltic motion of the stomach, it could not be

brought successively within the influence of the gastric juice. Here are plainly displayed the functions of the two nerves, the great organic penetrating the coats of the stomach, and producing the secretion of the solvent fluid—the cerebro-visceral producing the peristaltic motion: and so it is throughout the intestinal canal;—we have the phrenic nerve to assist in the compression and final expulsion of the food by contracting the diaphragm and diminishing the abdominal cavity, while the abdominal and thoracic muscles are contributing their aid by means of these frequent anastomoses.

And now, gentlemen, I have done with the nervous system. Of the nature of the nervous agency or fluid, or of the mysterious presiding power, whether it regards the animal or organic life, or both, I will not say a word. You will refer, at some period of serious leisure, to the speculations of physiologists on these abstruse but interesting points. You will find in Dr. Bostock's excellent "Compendium of Physiology," a clear statement and luminous comparison of all that has been said and written. With regard to this great organic nerve, you will have the most laboured and the best account of its functions in a note by Dr. Copland, appended to his Translation of Richerand; although the mere experimentalist, perhaps, will tell you that it is nothing but "supposition, hypothesis, and opinion—a mere *jeu d'esprit*." But I must conclude.

I feel, and you must have experienced, how difficult it is in a few lectures, and even assisted by demonstrations, to give a clear as well as comprehensive view of such a subject. If, however, I have succeeded in convincing you, with regard to the animal system at least, that it is not so mysterious as you, perhaps, had imagined, and if I have afforded the slightest clue to the understanding of a portion of the organic system, I am content. As for my peculiar opinions, I have stated none of them positively. Some of them are adopted, not as being satisfactory, but for want of better ones; and I trust you and I will always be open to conviction, and zealous in our search after truth.

ON CATARACT.

By Mr. HICKMAN, *V.S. to the South Salopian Regiment of Cavalry.*

SINCE I was in some degree concerned in the case of cataract in Mr. Croft's horse's eye, and my opinion of the matter differs from that of some of your correspondents, perhaps you will allow

me to say a few words on the subject; and, indeed, I may probably be expected to state what I saw, and what I believe about it.

Since I left the college, fifteen years ago, I have paid particular attention to the diseases of the eye; and, having the care of two of the largest coach establishments between Holyhead and London, viz., the Lion and Talbot in this town, at which places there are upwards of two hundred horses kept, I have frequent opportunities of seeing cases of ophthalmia, as the major part of the horses purchased for these establishments are sold in consequence of diseases of the eye; and when a horse of this description is purchased with cataract, I invariably find, upon inquiry, that inflammation was the forerunner.

Many other circumstances that have occurred in my practice convince me that inflammation, in some degree, always precedes cataract: such is my opinion; and such I gave upon the trial in question, and which was corroborated by three very respectable veterinary surgeons.

On the other hand, Mr. Clay stated, that cataract might form in ten days without inflammation, and that he had known several cases of it; and, in order to confirm this assertion, he has attempted to describe these cases. Now, neither of the cases he mentions in his letter proves any thing of the sort. In the second and third cases he only proves the discovery of the cataract, but does not prove that there was not any previous inflammation, and which might have occurred to her when the horses were at grass, or might afterwards have existed in a slight degree not perceivable by a common observer.

With regard to the filly, the property of Dr. Gardner, I will appeal to the profession to say if they think it possible that a cataract would form in four or five days, as asserted by Mr. Clay. In my opinion it is absolutely impossible; and if Mr. Clay did discover a speck in the eye, it must have been a little coagulated lymph in the posterior chamber of the eye.

I say, once a cataract always a cataract; and I never knew an instance of its being absorbed; and if cataract would appear in the very short space of four days, I think we should have heard something of it from Mr. Coleman, Mr. Youatt, or Mr. Percivall; and then I should have been inclined to have paid attention to it.

With regard to my friend and brother pupil, Mr. J. Hales, of Oswestry, whom I consider an ornament to our profession, I must beg leave to rectify a trifling mistake of his. In THE VETERINARIAN for July, page 373, Mr. Hales says Mr. Croft "had no supposition that his horse had a cataract, or he would not

have requested Mr. Hickman, to make a general examination of him after that gentleman had declared himself satisfied upon the point in dispute." Now, the facts are these:—When I was requested by the Rev. Mr. Roberts to examine the horse, I only examined the rupture; and told Mr. Croft that, in my opinion, it did not amount to unsoundness. Mr. Croft told me he was sure I should be of that opinion, and expressed his sorrow that it was not in my power to attend his summons, and wished me to give him a certificate to that effect. I then told Mr. Croft that, before I certified the horse was sound, I must examine him generally, and upon which examination I discovered the cataract.

MR. HALES IN REPLY TO MR. CARTWRIGHT—CATARACT AND HERNIA.

My paper on Cataract, &c. published in the July number of The Veterinarian, has produced a reply from Mr. Cartwright, evidently written under the influence of very angry feelings. Being no advocate for disputation, nor fond of "wordy war," I shall pass over all the first part of his letter, as requiring neither note nor comment, till I come to the passage in which he accuses me of a wish to detract from his professional reputation, and *very politely* says, he does not believe my assertion to the contrary. This charge of detraction is founded on the circumstance, that I have been the only man to find fault with several of his communications in this Journal. I found no fault with his paper on cataract beyond stating the fact, that he ought to have named the source from which he first derived his information, particularly as he charged another practitioner with using borrowed opinions as his own. Of the other numerous papers which Mr. C. has published in The Veterinarian, I have, in no way alluded to more than two of them. The first is "Cases of Rupture of the Diaphragm;" and of them I have merely said, that it appeared problematical, whether the rupture of the diaphragm was the cause of death, or was produced by struggles in the agonies of death. The other paper that I made any observations on is a case of "dropsy of the abdomen of a mare:" of this I remarked, that I did not possess the "*tactus eruditus*" of Mr. Cartwright, and could not detect water in the abdomen by percussion, or what he terms shaking it; nor did I consider his other tests to discover water in the abdomen as infallible.

Had there been no other object in view in writing the few papers that I have done for The Veterinarian than a desire to deprecate the character of Mr. Cartwright, or any other profes-

sional man, or the mere pride of authorship, the pages of your Journal would very rarely have been stained with the emanations of my pen; but when I saw that the *elite* of the profession—those whose communications ought to be the pride and ornament of a veterinary journal, have either never lent a helping hand, or, having held out the hand of promise in the beginning, "have broke it to the hope" by withdrawing their valuable support, I considered it a duty to lend my feeble aid, as it would be an indelible disgrace to our calling to give the world the opportunity of saying, that the veterinary profession could not, or would not, support one periodical devoted to its interests, and anxious to uphold the respectability and character of the veterinary surgeon. Let the stars of the profession come forth (and I could name a glorious constellation); let the numbers of THE VETERINARIAN teem with the fruits of their scientific knowledge and practical experience, then would I rejoice to throw down my puny pen, and willingly and gladly "be taught by better men."

Mr. Cartwright asks me, why I made no remarks on the subject of the trial when I sent the report to THE VETERINARIAN? The answer is easy: I acted merely as a reporter; my name did not appear to the publication, nor is there one word of my own throughout the report.

He also wishes to know, why I thought him wrong for publishing "such a letter" in the newspaper? To this I reply, that I do not consider a country newspaper, seen but by few veterinarians, as the proper place for such a discussion, especially when we have a monthly journal expressly intended for the consideration of veterinary subjects; and more particularly as Mr. C. had been writing a great deal in THE VETERINARIAN before the appearance of his letter in the Shrewsbury paper.

Mr. C. next alludes to my case of mistaken cataract, and says that he should at once have known that it was not cataract. He then tells us how he should have known it—because there was inflammation existing at the same time. Now, if he has never seen inflammation and small cataract existing in the horse's eye at the same time, I can assure him that this phenomenon may be witnessed in the eyes of numbers of horses going blind with the specific ophthalmia. He also remarks, that the slight motion in the speck, that was fancied to be seen on the second examination, would have told him it was not a cataract: perhaps it would; but I wanted not his help then, for that very circumstance led me immediately to suspect that my opinion of the previous day was an erroneous one; and I have so stated it in giving an account of the case.

My opinion that every hernia is unsoundness is next assailed. Several veterinary surgeons of my acquaintance, whose opinions

I respect, think differently on this subject to what I do. I may be wrong. If we had a settled code of soundness and unsoundness, which is "a consummation devoutly to be wished," I should, with confidence, look to such code as the proper guidance in all cases of examination; but so long as every veterinary surgeon is left to his own resources upon this subject, I shall consider myself bound to act according to my own conviction. I have not had the opportunity of seeing *scores* of cases of hernia, particularly in grown horses, that Mr. Cartwright's practice has afforded to him; yet two cases of strangulated hernia have fallen under my notice. The first was a small umbilical one, in which the strangulated portion of intestine sloughed, leaving an opening at the umbilicus, through which was a great discharge from the bowels, and the animal was destroyed without my knowledge. The other was scrotal hernia: this case, however, I did not see whilst living, owing to the carelessness of the messenger who was sent to me. This horse (a stallion) had been sold a few days before, warranted sound, and had been very improperly treated by the purchaser. The case was left to reference, and the referee (a magistrate) decided that, as the horse was ruptured be could not be sound; and he would not go into the improper treatment, alledging that, as the warranty was incorrect, the seller was responsible. Neither the buyer nor seller knew that the horse was ruptured: the person who sold him was aware that the scrotum on that side was larger than the other; but it was the same when he came into his possession, and he supposed it to be of no importance.

Strangulated scrotal hernia is by no means uncommon in those countries in which castration is not performed. There is also a case of strangulated abdominal hernia recorded in THE VETERINARIAN of March last, by Mr. Thompson. The chance of strangulation, then, is not so very remote as some would infer it to be; but admitting strangulated hernia to be a more rare disease than it appears to be, still I should consider a rupture an unsoundness; for we have a most important part, the interruption of the functions of which would not only deteriorate the value of the horse but destroy his life, deprived of its proper and natural covering and protection, and only defended from external accidents by the skin, &c. A horse with umbilical or abdominal hernia may be killed in going over a country, or even breaking fence, by an accident that would scarcely have injured him had all his parts been whole. Would any person give the same price for a horse with hernia, however small, that he would do if no such defect existed; or buy him as a sound horse, knowing that he had hernia? I shall therefore repeat, that I consider a horse

with hernia unsound, although he may probably "plod his weary way" for the term of his natural life without dying of strangulated hernia, or being killed by an accident to the part. I may, perhaps, here remark, that there is little difficulty in curing umbilical hernia in foals or yearlings, by the proper adaptation of a bandage.

I now take leave of this subject, fully assuring the editors and readers of THE VETERINARIAN, that any statement I may make or opinion I may give in its pages, if thought worth so much notice as to call forth the comment or fair criticism of my professional brethren, I shall not only be content, but pleased to abide the ordeal, well knowing that such is the surest way to ascertain truth: but ill-nature should never supply the place of criticism, nor irritated feelings mislead the judgment.

MAL-CONFORMATION IN A COLT—DOUBLE LEGS.

By Mr. W. A. CARTWRIGHT, *V.S., Whitchurch.*

IN the month of April 1834, a cart mare, the property of Mrs. Craven, of Bronington, Flintshire, four miles and a half from hence, cast her foal about one month before her time. Its two fore legs presented the following curious formation:—On the outside of each leg grew from the metatarsal bones an additional part of a leg, but of a smaller size. Each of them commenced from the lower half of the cannon, and diverged from the principal one, forming a distinct inferior part of the cannon, and also perfect pasterns and hoofs. The additional joints did not reach down so low as the natural ones, and the pasterns were merely connected together by skin, but were pretty well formed.

They make a beautiful specimen, and are in my possession; but it was a great chance that they were not thrown away. I should think they were similar to those of a mare that travelled about this country some years ago, and went, I think, by the name of "Creeping Jenny." One of the hind legs was bent at the hock, and at the fetlock joint, forming three sides of a square.

AN INVETERATE CANCEROUS AFFECTION IN A COW.

By the same.

SOMETIME about the month of October or November last a cow of Mr. Tudman's, of Black Park, got "hiked," or injured by another cow's horn, in her vagina, on the near side, at its

orifice. The owner attended to it, and used many applications; but on the 6th of April last he sent for me to see her, she being much worse. I found the posterior portion of the vagina on the near side scirrhous, ragged, and with two abscesses in it. I laid them open, and applied lin. terebinth.

April 15*th.*—Passed several setons through the parts.

24*th.*—Finding the animal no better, I removed the scirrhus, which weighed, I should think, three or four pounds, and also a fungus the size of an egg, from the upper part of the vulva internally; I then applied the cautery pretty severely to the whole diseased surface. The large tumour was very vascular, and in an unhealthy ulcerated state.

May 3*d.*—I sent a lotion, composed of argent. nit. ʒss, aq. distil. ℥iij., to be applied to the parts, in order to form an eschar, if possible, for the wound was continually being irritated with the dung.

8*th.*—All appears to be going on very well.

27*th.*—From last date to the present, the parts contiguous to that which had been removed gradually increased in size, similar to the former scirrhus, and contained an unhealthy abscess. A tumour had also formed three or four inches lower down, in the raphe, containing matter, and which I now opened. I also removed the tumour above (about four pounds weight), and ordered it to be dressed with lin. tereb.

June 2*d.*—It seems as if tumours were about to grow again, for the part is very vascular, and lumps of fungus spring up in different parts of the surface: I dressed the parts with a solution of corrosive sublimate.

7*th.*—Another fungous tumour has sprung up, the size of an egg, on the superior internal part of the vagina, which I now removed, and again applied the cautery. The other parts seem to be doing very well.

16*th.*—There is a tumour half the size of the fist, about nine or ten inches below in the centre behind and between the legs; and the upper portion of the back part of the udder is also harder than it should be, but not sore. The parts formerly diseased are still going on well. I sent ℥iij. ung. hyd. fort. to be rubbed on and about the tumour and udder at different times. After it had been rubbed in two or three days, it caused so much irritation that the application of it was suspended.

23*d.*—The parts about the vagina have become as bad as ever, being enlarged, hardened, and ulcerated; and on putting my finger into the ulcerated parts inside, they bled copiously. The tumour underneath is much enlarged, being now the size of a man's fist, and hard. The upper part of the udder continues

also to enlarge, but neither it nor the tumour is sore. There are now two other tumours between the former one and the vagina. We agreed to leave them alone for a week, and to watch their progress, as we have but little hope of her getting well, for it is evidently a constitutional disease. She milks well, keeps in good condition, and her general health does not seem to be affected.

30*th*.—The parts about the vagina continue to harden and enlarge. The two uppermost tumours increase in size, and the lowermost is now half the size of a man's head, and evidently contains a fluid. I opened it, and a full quart of matter escaped, but rather of an oily nature; and, after the matter was evacuated, on squeezing it, a large quantity of, I should say, coagulable lymph came away. The wound bled a good deal, and I merely dressed the cavity with tow. She does not look quite so well as she did, though she milks equally as well.

July 4*th*.—I opened the uppermost tumour, and a quart or more of matter, similar to that in the other, escaped. I dressed the wound with lin. tereb.

11*th*.—From the udder to nearly the vagina is now one unhealthy wound, the abscesses having opened into each other. I dressed the original tumour with ung. arsenical; but there seems to be no chance of the cow ever getting well, as the whole of the diseased surface has put on a most unhealthy ulcerated appearance. She milks pretty well, but gets thinner; and the ulcers stink abominably.

21*st*.—She was killed; and I am sorry to say, that I had not an opportunity of opening her, as she was sold to a butcher unknown to me.

If a similar case occurs, will Mr. Cartwright give a fair trial to the hydriodate of potash, as an unguent and an internal medicine? The ointment should be composed of one part of the hydriodate and seven of lard; and three grains of the hydriodate may be given internally in a mash or drink every morning and night; the dose being gradually increased to six grains. It is a new article in the veterinary pharmacopeia, and we do not think that it will deceive him. The chloride of lime will be a useful auxiliary.

Communications from Mr. Cartwright have always been welcome to us: they have added much to the value of our Journal, and they have reflected great credit upon him. The above cases, however, were received with more than usual pleasure: they proved that there was no war between us and Mr.

Cartwright—indeed, we were assured that there could not be; and, sent so promptly after the application of our editorial scalpel to his last letter, they evinced a good and kindly feeling, which we trust will be prevalent through the whole profession.

And now, having inserted Mr. Hales's reply to Mr. Cartwright, and which he had a right to demand, and truly regarding Mr. Hales (in the language of Mr. Hickman) as "an ornament to our profession," and his pupil Mr. Cartwright (in the language of Mr. Hales) as "a very persevering man, to whom great merit is due," we trust that all personal controversy between them will cease. The question of cataract or of hernia is still open to either of them, or to any one, and "of fair criticism they must abide the ordeal;" but never, in our Journal, shall "ill-nature supply the place of criticism, nor irritable feelings mislead the judgment."

EDIT.

ON THE VENTILATION OF STABLES.

By Mr. C. BRETT, *V.S. 12th Royal Lancers.*

To the Editors of "The Veterinarian."

PERHAPS, gentlemen, you will deem the following outline of a plan for the ventilation of a stable scarcely worth inserting in your valuable periodical. I should not have ventured to submit it to you, had it not been much approved of by Captain Piper, of the Royal Engineers, who expressed to me his intention to attempt its introduction into the barrack stables at Manchester. Moreover, I saw the subject on the tapis in the last VETERINARIAN; and a further inducement has been, that it may, perhaps, call forth a better contrivance from the pen of some one else.

My plan is this:—Suppose a stable to be blocked up by other buildings on all sides except at its two ends; in that case I propose to have a large wooden tunnel, two feet square, running the whole length of the stable under the mangers; and if it should be a double stable, one tunnel under each row of mangers. These conduits are to come through the end walls of the stable, and to be open at both ends on the outside, for the purpose of admitting a thorough draught or body of air through them. This main stream of air is to be equally dispersed about the stable by means of perpendicular wooden shoots or chimneys, six inches square, emanating out from this main tunnel, one at the head of each stall-partition. They should be seven or eight feet high, so as to avoid a draught on the horse's eyes, and open at their tops like chimney pots, and should stand out two

feet from the wall. The rarefied state of the air in the stable will cause a constant flow of cool air through this main tunnel and up these chimneys; and will equalize the temperature of the stable, and entirely obviate the draught of wind that blows in at the horizontal holes in the walls of our stables, as at present ventilated. These perpendicular chimneys may have one or two other apertures in them besides the one at their tops, at different heights, that may be opened or closed at pleasure, to admit air by means of a door with a hinge and button opening on that side next the wall, whereby a direct current of air on the horse will be averted. If these air passages should not be thought sufficient, other horizontal tunnels, branching from the main one, might run from it at right angles under each stall partition, and terminate in a perpendicular wooden chimney, six feet high at each heel post.

But supposing the stable not to be blocked up on any side by other buildings, I would then dispense with the longitudinal main horizontal tunnel altogether, and break a hole, two feet square, through the wall, under each manger, in each stall, and in a line with the stall partitions. These apertures should be fitted with square wooden tunnels, each two feet long, exclusive of the thickness of the wall, and closed at their ends which are inside the stable: out of each of these short horizontal tunnels a perpendicular wooden shoot or chimney, in height six or seven feet, and open at the top, should ascend for the admission of fresh cool air. In the *ceiling*, directly over each horse's head, a hole is to be broken through for the exit of the contaminated air, and a passage given to it through the roof by means of perpendicular wooden chimneys sheltered at the tops by curved tiles, to prevent the descent of rain on the horses: this could be effected, notwithstanding that either a loft or soldier's room were over the stable. The whole being of wood, the expense would be inconsiderable; and the benefit from a thoroughly and equally ventilated stable would be great. In a troop stable of sixteen horses, the air admitted by the open half door or window is very unequally distributed: the coats of those horses next the doors are staring, while the centre horses can hardly get a breath of fresh air to inhale. The mode of introducing air by holes at the bottom of stables, though certainly better than none, is a rude contrivance. The air rushes in on the animal as he lies in his stall, which the groom perceiving, never fails to stop them up with bedding, and thus no air at all gets admittance at night.

A CASE OF PARTURITION IN THE COW.

By Mr. TAIT, *V.S., Portsoy.*

> O, heaven, that such *empirics* thoud'st unfold;
> And put in every honest hand a whip,
> To lash the rascals naked through the world,
> Even from the east to the west!
>
> SHAKSPEARE.

I WAS called the other week to see a cow, which had been in calving for nearly twenty hours previous; and, on examination, I found the head pressing against and over the pubis, with the fore legs protruding externally. The case was plain; and I immediately proceeded to push back the legs and elevate the head, by getting my finger into the orbit first, and, after taking hold of the under jaw, and bringing it into the axis of the pelvis, I had no difficulty in taking the fœtus away.

Remarks.—Perhaps there is nothing peculiar in this case; and it is likely that I should not have sent it (for I have had many more difficult under my care) were it not to shew the danger of trusting valuable animals to pretending *quacks*, with whom this country so much abounds.—"Tell it not in Gath, nor publish it in the streets of Askalon." This cow was attended all the time by *our* most *canny* and *skiely carlie*, who had used a great deal of manipulation in ineffectual attempts either to raise the head or to pull the calf away by the fore legs, even though the head was reverted on the shoulder: finding he was not likely to be successful, he told the owner that nothing could save the cow but to take the calf out at her side, which he was about to do; but the proprietor wished my opinion first, and I was accordingly sent for. After the calf was taken away, this *ignoramus* had the presumption to order half a bottle of wine to be given to the cow, although she was under my care (I learned afterwards that he had given one bottle before I saw her, as he said, "*to keep back inflammation!!*"), though he had been handling her not over gently for many hours before, which had produced great inflammation and swelling of the vagina and external parts: this, of course, I objected to; and desired a pailful of meal and water to be given, which she took readily, and a pound of Epsom salts, dissolved in gruel, to be given an hour after the birth. The cow has not required any thing else, and is now quite well.

Here is a case in which a valuable animal would have been sacrificed by the mere ignorance and presumption of a regular pretender; for any one at all acquainted with the anatomical construction of the parts could not have had any difficulty in relieving

the cow, either by the course which I adopted, or by separating the fore legs from the thorax, which is a plan I have often followed, and always successfully.

It astonishes me not a little, that sensible men should trust the lives of their animals in the hands of such empirics; it is, however, frequently the case in many parts of this country, that the veterinary surgeon is not called until it is too late, or, to use a sportsman's phrase, only "in at the death." These are facts, gentlemen; and facts are

——— "Chiels that winna ding,
An' downa be disputed."

And were it not for the cause of humanity, it would be meet to wish them joy of their *skiely man* or *woman*, and let them learn by the loss of their cattle the ignorance of those they employ.

Portsoy, 26th June, 1834.

AN ACCUMULATION OF CALCULI IN THE SHEATH OF AN OX.

By the same.

I WAS lately requested by Mr. Dupont, of Bogtown, to examine a three-year-old stot, which he said had a considerable swelling under the belly, resembling a bonnet; and he thought that there was, at the same time, an obstruction in the urethra. On examination I found the swelling as large as stated, occasioned by an accumulation of urine in the sheath. I immediately introduced a probe-pointed bistoury, and made an incision of about three inches long, when nearly a gallon of water followed, with some calcareous matter; and, on putting my finger into the sheath, I extracted about fifty calculi, from the size of a pin's head to that of a filberd: the animal is now quite well.

Remarks.—The cause of the accumulation may be easily accounted for by an adhesion of the sheath, which took place in consequence of the extirpation of some large warts from its orifice six months ago; and though there was at first an opening left sufficient to let the urine flow, a calculus had filled up the small aperture so completely as to prevent its exit. From this I would conclude, that the formation of urinary calculi in the lower animals is much more frequent in this quarter than is generally supposed; and they are voided with the urine before they attain a large size, as in this case, for their existence would not have been known had it not been for the contraction in the end of the sheath.

ON SANDCRACK.

By Mr. J. P. CHEETHAM, *V.S., Edinburgh.*

HAVING had numerous cases of sandcrack under treatment during the last twelve months, and those of the worst description, I have ventured to forward you a few lines respecting them, and this disease of the foot generally. The cases that I particularly allude to were chiefly in the centre of the toe of the hind feet; extending from the coronet to the ground, with a complete division of the crust, and some of which had been so for years. Few of them exist without the hinge motion, and that is principally seen in the superior part of the fissure, and when extensive, the laminæ connected with it become inflamed, the effects of which often are suppuration, and separation of the horny covering; this is also frequently produced by sand and wet getting to the living parts.

At this stage the animal is frequently unable to put the foot to the ground; considerable irritative fever is often present, so much so in some instances, I believe, as to destroy life. Sandcrack is more severe in the London dray horse than any other I am acquainted with, which is in part accounted for from the motion being more extensive in the crack than in horses of a lighter description, and they being unable to support themselves long upon the opposite leg. Another reason why sandcrack should be so common in the heavy dray horse of London I was soon convinced arose from the mode of shoeing their hind feet, which is by putting on heels without adding the tips (nobs), to keep the toe the same height with the heel. When the animal is driven with this kind of shoe, the whole weight is directed and thrown on the toe; the crust in front becomes nearly perpendicular; there is a tendency to knuckling produced; the foot (if I may be allowed the mode of comparison) is going down hill, by which means the weight is directed more towards the anterior and superior part of the crust, at which situation the crack usually commences. The best explanation I can give of the foregoing opinion is the following:—

Let us suppose that a horse has from two to three tons of load behind him, and, proceeding down a declivity, the horse finding that the heels of the shoes are the best parts for resistance, the heels then being fixed points, the coffin bone act on the laminæ covering the quarters and heels, so much so, that they are actually pressed between the coffin bone and crust, while those at the toe are relieved; but by that very relief from pressure they are stretched or expanded, and it is this too great ex-

pansion of the crust at the anterior and superior part of it which produces the fracture: and all this is to be traced to improper shoeing. What warrants me to be so decided upon this point is, that a country mode gives nearly instant relief.

The same effect may, however, in some instances, be produced when ascending a hill (Holborn hill), when these poor animals' feet are slipping every moment from under them, unable to get a hold of the ground, and, at the same time, using their utmost power to accomplish it. I have often felt for them, knowing, from experience, that they could be assisted merely by putting on tips. Why should these be banished from London? They certainly are not natural productions, nor are the shoes; and if we are to apply for artificial means to complete our ends, why not execute them to their fullest extent?

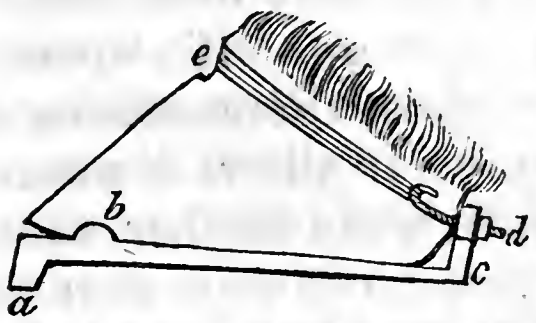
At one time I was prejudiced against heels and tips, thinking the foot was supported on three points, and that they were the cause of ossified lateral cartilages; but, as a proof that these may be present without such shoes, I examined upwards of ninety horses in one stable, where not above six were free from ossification of the cartilages. These had been unaccustomed to have any heels or tips on the fore shoes. I was particularly struck with the use of the tips a number of years ago, in Edinburgh, in watching a cart horse going up a hill; I then saw that he carefully searched with the tip the space between the stones before he ventured to apply his force to move the load onwards; which satisfied me that they could not be dispensed with without disadvantage. I am still the more convinced, after seeing such numbers of horses falling down from the want of them; and in no instance have I seen them enabled to apply their whole strength for the want of a resistance.

The treatment of sandcrack in the toe of the hind feet is one of the evils, I am aware, few veterinarians like to have much to do with, from its obstinate nature, the time required to effect a radical cure, and the probability of its return. But when we have an obstinate case entrusted to our care, something must be done, and that is expected to be upon scientific principles.

The general method, in the acute form, is to thin the horn on each side of the division, and chiefly at the superior part, and if any horn is detached to remove it; but if this can be avoided, the cure will be more speedy, for the granulations that afterwards shew themselves in the fissure are difficult to reduce, and keep up a constant irritation. The shoe should always be removed, and the sole pared out until the blood oozes through the horn; after this the foot should be held in warm water for hours together, and, when taken out, immersed into a large poultice: by this

practice the horn will expand and become flexible, which is a most desirable object in all cases of inflammation of the feet. Bleeding from the saphena major or pastern veins, or from the foot, will be found to give relief; but, in general, an active purge is all that is required in the primary stage. If a case should remain a day unrelieved, I would at once have him in the slings.

When our patient begins to place the foot on the ground, the motion must be stayed in the crack; and that is best effected by placing on a shoe with a tip and no heels, which produces quite an opposite position of the crust, it being more oblique; the horny laminæ in front are thrown into action, by which the sensible laminæ are removed from between the edges of the crack, and its sides have a tendency to be drawn nearer together. By means of two plans of binding the foot, I have been enabled to suspend that annoying motion in the crack which is so difficult to combat. The first is, when the two heel nails are driven on each side, to turn them down without removing the points: from one of these points of the nails to one on the opposite side pass a wire, and cross it from one to the other until a strong band is formed. The other two remaining points are to be treated in the same way; then two straps should pass over the crack, one near the coronet, and the other lower down. To tighten this, a wooden wedge may be put between the wire and hoof of each band. The shoe and method of binding the sandcrack I have derived the most benefit from is shewn in this sketch. The shoe has a tip (*a*), a clip on each side the crack (*b*), and at the heels two portions of iron turned upwards, the one on the inside being flat, similar to a clip, with a hole made in the superior part, and an opening cut into it posteriorly for the reception of wire; the outer one (*c*) may be said to be reversed, in regard to the inner one; and through the perforation of this a screw passes with a nut (*d*). At its opposite extremity there is a small hook. A hoof is thus prepared for this shoe: the crust is cut away at the toe, and at the superior part of the crack is rasped nearly to the coronary ligament, where, in most cases, there will be found a species of horn, filling the crack before you come to the living parts.



When the shoe is nailed on, wire is lapped a few times from the hook on the screws to the one on the inside heel: these lappings are to be placed in the part excavated by the rasp (*e*), or a few of them may be passed over the crack lower down; after which, by turning the nut on the screw, these different foldings of wire may be drawn so as to fix the motion at the seat of the

crack. The screw supersedes all the other methods I have yet seen, by its tightening or slackening the wire at pleasure: the former is always wanted, while the latter must be had recourse to when the pressure produces lameness.

My reasons for not prefering Mr. Sewell's shoe (which has a portion of iron under each of the clips (*b*) like a heel), is that a horse is enabled to rest a portion of his weight between the sole and toe, which creates a motion in the crack; and besides, they have not the power as tips to produce that action which is to bring the crust downwards and backwards. Each side of the toe should not be cut away any more than to relieve the crack from pressure, while the heels of the crust must be made low.

The only other application I have used has been tar; these, combined, have cured a number of the worst cases, and which have existed for years.

Many will wonder why I did not fire and blister:—I would do so for sandcrack in the quarters of the hoof, there not being so much motion. I tried it in a few of these cases, but with no effect. I have given the blister up, on the grounds that the animal, while under the action of it, is moving continually, and the crack seems to be kept in motion; therefore I would not recommend the use of blisters until, at least, a portion of solid crust is secreted.

Absolute rest must be enjoined till you have an inch of solid crust, and then the animal may be employed at any occupation that may be said to be little more than exercise. If a horse should be put to severe work with this shoe, there will be a danger of some other part of the limb suffering. In all cases where they cannot be spared, I let them work with a tip higher than the heels; and if this is not attended to, and a common shoe or the tips has got worn off, you may soon expect to have a lame horse:—this I have often seen.

THE IMPORTANCE OF THE VETERINARY ART;

BEING A LECTURE DELIVERED BEFORE THE PHILADELPHIA AGRICULTURAL SOCIETY,

By Dr. RUSH.

Gentlemen,—THE science of medicine is related to every thing. A mere physician, that is, a physician who knows nothing but the sciences which are supposed to belong exclusively to his profession, is a non-entity. To deserve that title in its extensive import, it is necessary for us to know something of the principles

and practice of every art and pursuit of man. There is scarcely one of them that does not furnish some useful facts, or striking analogies, which may be applied to practical purposes, or to the support of some important principle in medicine. Even the science of morals is capable of affording aid to the healing art, by its influence upon the understanding through the medium of the passions. It produces this effect in proportion to the extent of the objects to which we direct our benevolence. The physician who loves the whole human race, will always be actuated with more zeal to extend the usefulness of his profession, than the physician whose affections are confined to the limited circle of his habitual patients. His zeal will be more active, and more impressive upon his understanding, should he descend in the overflowings of his benevolence from the human species, and embrace in his studies and labours the means of lessening the miseries of domestic animals. This part of the brute creation has large demands upon us. The design of this lecture is simply to point out the duty and advantages of studying their diseases, and the remedies that are proper to remove them. The subject is an interesting one to private gentlemen as well as to physicians; and I entertain too high an opinion of the good sense and correct views of medical science of my present audience to believe, that a few remarks upon it will be deemed an improper introduction to a course of lectures on the institutes and practice of medicine.

We are bound, in the first place, to discharge the important duty to domestic animals which I have mentioned, by the relation which has been established between them and us by the Author of Nature. They were created at the same time, and from a portion of the same dust of which our great ancestors was formed. They are the only part of the brute creation over which man has retained his dominion since his banishment from paradise. We are to them, says Dr. Hartley, the vicegerents of God, and empowered to receive homage from them; and we are obliged by the same tenor to be their guardians and benefactors. Their subjection to death, and all the diseases and pains which they feel in common with us, are the effects of the same rebellion against theGovernor of the Universe, which subjected Adam and all his posterity to the same evil.

The disease of the animals which still roam the forests, and refuse to be subject to man, are few in number, and generally of so mild a nature as to yield to the operations of nature. But this is far from being the case with domestic animals. Like the human race, they acquire new and violent diseases by civilization, or by the manner of life to which their connexion with us, and their subserviency to our interests and pleasures, expose them.

Even parturition, so perfectly the work of nature in beasts of prey, is often attended with the same difficulty and danger in domestic animals that take place in women. Of this Dr. Bland has mentioned some remarkable instances in his Observations upon Human and Comparative Parturition. Similar instances have been communicated to me by Dr. Dewees, as having occurred under his notice while he practised midwifery in the neighbourhood of Philadelphia.

2d. We are bound to study the diseases of domestic animals, and the remedies that are proper to cure them, by a principle of gratitude. They live only for our benefit. They cost us nothing in wages or clothing. They require, in exchange for their labour and all other advantages we derive from them, nothing from us but food and shelter, and these of the cheapest and coarsest kind, so that there is constantly due to them an immense balance of debt from us. This motive to take care of their health and lives will appear more striking, when we consider the specific benefits we receive from each of them. The horse is not only an important appendage, but a necessary part of the cement of civilized society. He ploughs our fields—he drags home our harvests and fruits to our barns and cellars—he conveys them from distant countries, over rough and difficult roads, to our market towns and sea-ports—he receives in exchange from them the products of foreign nations, and conveys them to the interior and remote parts of our country—he keeps up the inland connexion between different states by means of stages and posts, and thus favours the quick communication of intelligence, and the increase of national intercourse, commerce, and happiness—he administers to our health and to our pleasures under the saddle and in harness—he keeps up society and friendship in neighbourhoods too scattered in its population to admit of visits on foot. In vain would country churches and courts be opened without the strength of this noble animal; nor could the great system of representative government be supported in an agricultural country, unless he conveyed the elector to the place of suffrage. In maintaining the freedom and independence of nations, the horse bears a distinguished part. When caparisoned with the furniture of war, he feels with his rider the courage and the pride of arms. In the race, he delights us with his swiftness, in which he exceeds all four-footed animals. Nor let us forget his sagacity in discovering roads, and chusing the safest parts of them, when inattention or darkness has rendered his rider or driver unable to discover them. In the physician's midnight excursion to visit the sick, how often has his horse conducted him in safety (and sometimes overcome by sleep) through imperceptible paths,

and across deep and rapid currents of water, to the door of his patient, and again back to his own home. Still further has the convivialist, who has sat too long over his evening bowl, owed his life or his limbs to the good temper of this faithful animal, who, in spite of a contrary direction of his bridle, has carried him with unbroken bones to the arms of his servants, to be conveyed by them to his bed, in order to doze away the remains of his intoxication.

To the horned cattle we are indebted for many of the blessings and comforts of life. The strength and patience of the ox in the plough and the team, have added to the wealth of the farmer in every age and country. The cow has still greater demands upon our gratitude. Her milk, in its simple state, furnishes subsistence to a great part of mankind. Its products in cream, butter, and cheese, form the most agreeable parts of the aliment and even of the luxuries of our tables. A pustule upon her udder supplies a matter which, when introduced into the body, defends it for ever from the small-pox, and without substituting in its room a painful or loathsome disease. Millions in every part of the globe unite with us in expressions of gratititude to heaven for this important contribution to the happiness of the human race. But our obligations to this benefactor of mankind, and to her whole species, do not cease with their lives. Their flesh affords us the most agreeable aliment after death. Their tallow, and the oil which is interposed between their joints, supply the absence of the sun in candles and lamps, whereby labour and study are profitably extended during a part of the night. Their hair affords a necessary ingredient in the plaister of our houses. Their skins protect our feet and legs in the form of shoes and boots from the injuries of the weather. They furnish likewise coverings for our books and pleasure carriages, and saddles for our horses. Their horns supply us with combs; and even their bones are converted, when fresh, into aliment, and when dry, into a salt of extensive use in medicine, and in a variety of the arts.

Sheep occupy the next rank in the list of domestic animals in their claims upon our science. They afford us by their wool a covering from the inclemency of winter during every year of their lives, and by their deaths they supply us with a delicious aliment in the forms of lamb and mutton.

The hog is said, like the miser, to do good only when he dies. But this is so far from being true, that he is dishonoured by the comparison. He fattens upon the offals of our kitchens, and performs the office of a scavenger in cleaning the streets of our cities from putrefying masses of animal and vegetable matters.

At his death he bequeaths us his flesh for food, his hair for brushes, and his fat for medical and culinary purposes.

The immense and profitable disproportion between the labour of the ass and the mule, and the expense of their food, render their health of great importance in those countries where wheel carriages cannot be employed to convey the products of the earth to a public market.

The goat by its contributions of the delicate flesh of its young, and of its medicinal milk to our use, is entitled to a share of medical attention.

The courage and fidelity of the dog in defending our persons and property from the midnight assassin and robber, and the usefulness of the cat in destroying or chasing from our houses the mischievous animals that infest our cellars and closets, entitle each of them to an inquiry into the causes and cures of their diseases.

It remains only to mention the claims of poultry of all kinds to a physician's care. They adorn our yards and fruit trees with their plumage. They inform us by their crowing and other noises of the approach of day. A part of them furnish us with eggs for aliment, with quills for writing, and with feathers for our beds; and all of them, in a greater or less number at a time, generally constitute after death a portion of our banquets, where a display is intended of hospitality or elegance.

In addition to what has been said in favour of domestic animals in their individual capacities, I shall only remark that, collectively, they lessen the solitude and silence of a country life. They please us with their gambols when young, and delight us by their looks and gestures in mature life every time they receive food or shelter from our hands. They furnish the means of increasing and perpetuating the fertility of our lands, and, finally, they gratify us with a sense of our sovereignty over their labour and their lives; and thus furnish us with a small portion of that pleasure which the father of the human race enjoyed, when he received from his Creator the commission of his extensive dominion over all the creatures that live and move upon our globe.

A third reason why we are bound to study the causes and cure of the diseases of domestic animals, is because nature is wholly *passive* in such of them as are violent, or does harm in her efforts to remove them. This is evident in a more especial manner in the epidemics which sometimes prevail among them. The horses, cattle, and sheep, of large neighbourhoods and extensive districts, are often swept away by those general diseases where no aid is afforded from medicine.

4th. By studying the diseases of our domestic animals, we may rescue them from the hands of quacks, who add to the mischievous and unsuccessful efforts of nature the evils of absurd, painful, and destructive remedies. Under this head I shall introduce a passage from the words of Mr. Vial, which exhibits those evils in the most expressive and affecting language. Speaking of the veterinary science, he says, "At this moment all appears obscured or bewildered by the ill-placed confidence of the owners of cattle upon the blacksmith of the parish, upon illiterate and conceited grooms, stupid and listless shepherds, or upon a set of men infinitely more dangerous than all the rest, who, arrogating to themselves the style of doctors, ride about from town to town, distributing their nostrums, compounded of the refuse and vapid scraps of druggists' shops, to the destruction of thousands, whose varied disorders they treat alike, neither consulting nature or art for the cause or effect.

"Miserable animal! bereft of speech, thou can'st not complain, when, to the disease with which thou art afflicted, excruciating torments are superadded by the ignorant effort of such men, who at first sight, and without any investigation to lead them to the source of thy disorder, pronounce a hackneyed common-place opinion on thy case; and then proceed with all expedition to open thy veins, lacerate thy flesh, cauterize thy sinews, and drench thy stomach with drugs adverse, in general, to the cure they engage to perform."

5th. It is our duty and interest to attend in a more especial manner to the health of those domestic animals which constitute a part of our aliment, in order to prevent our contracting diseases by eating them. Certain vegetables upon which they feed by accident, or from necessity, impart to the milk and flesh of some of them an unwholesome quality. Great labour sometimes has the same effect. A farmer in New-Hampshire, who had overworked a fat ox a few years ago in the time of harvest, killed him and sent his flesh to market. Of twenty-four persons who ate of it, fourteen died, and chiefly of diseases of the stomach and bowels. Putrid exhalations produce obstructions and ulcers in the livers of cattle, sheep, and hogs, which render them unfit for aliment. They are, moreover, always unhealthy during seasons in which they propagate their species; hence the wisdom of that church which substitutes fish for flesh during a part of the spring months. Even the heats in summer, in middle climates, lessen the wholesome quality of flesh; hence the propriety of living chiefly upon vegetables with a small portion of salted meat during the summer and autumnal seasons.

6th. We are further called upon to study the causes, seats, and

remedies of the diseases of domestic animals, by the duties which we owe to our country and to humanity. The products of agriculture and commerce are often lessened by a fatal epidemic, brought on by diseases which blast the character of animal provisions; and many poor families have been left to suffer all the evils of penury and famine by the death of a single horse, upon whose labour, of a cow upon whose milk, or of a hog upon whose flesh, they had relied exclusively for subsistence, all of whom, perhaps, perished by diseases that might have been cured.

7th. By extending our knowledge of the causes and cure of the diseases of domestic animals, we may add greatly to the certainty and usefulness of the profession of medicine, as far as it relates to the human species. The organization of their bodies, the principle of animal life, and the manner in which the remote and proximate causes of disease produce their morbid effects, are the same as in the human body, and most of medicines produce in them and us nearly a similar operation. Their acute diseases are the same as ours. They are subject to epidemics from an impure atmosphere as well as from contagions. Fevers, catarrhs, hemorrhage, dysentery, dropsy, scrofula, vertigo, madness, worms, stone, and apoplexy, affect horses, horned cattle, sheep, hogs, and dogs. The rheumatism, angina, and tetanus, affect horses. Cows are subject to diabetes. Cancers have been observed in dogs. Cats suffer and die from a disease which appears to be a form of bilious fever. Cutaneous eruptions and sores are common to them all. In short, when we except the diseases which are the effects of certain trades and professions, of intemperance, of the operations of the mind, and of a peculiar function in the female body, there is scarcely a form of disease mentioned in our system of nosology, but what is to be met with in domestic animals.

PHRENITIS IN DEER.

By Mr. F. Good, *V.S., Wells.*

[We insert the following interesting account, by an old pupil, of the symptoms during life, and the post-mortem appearances, of an epidemic disease, which from time immemorial has occasionally appeared in our parks, and swept off thousands of deer. It is, we believe, the only detailed account of the malady on record. The character of the disease is plain enough,—it is inflammatory fever, with peculiar determination of blood to the

head. The treatment, where treatment is practicable, is plain enough—depletion by the lancet and the physic drink; but who will give us a satisfactory relation of the cause or prevention?

Y.

Colonel Horner, of Mells Park, about twelve miles from hence, has fine herds of deer, but since April last no less than sixty head of them have died of a malady of a very peculiar nature. Yesterday I received a letter from the medical practitioner of that place, desiring me to come over and examine into the affair. I immediately proceeded thither. The first subject I was shewn was a fine buck, which had died in the climax of the disease the previous evening near a stream of water. The keeper informed me that, when attacked with the disease, the animal ran furiously at every thing, butting his antlers and head against the paling, trees, walls, or whatever opposed his onward course, and expired in three days from the commencement of the disease. He also informed me that the appearances were the same in every case which he had examined after death, excepting in the larynx.

I then proceeded to a post-mortem examination. I first dissected out a portion of the trachea, and found the membrane lining the larynx very highly inflamed, and the inflammation extending as far down as the bronchiæ. The epiglottis was similar to a piece of scorched leather; the root of the tongue was also highly inflamed. I then proceeded to the stomachs, and I found the rumen fully distended with food, viz. grass, leaves, pieces of chestnuts, sprigs of trees, &c., with a patch of slight inflammation on the cuticular coat, but not fully developed: there was also a quantity of food in the duodenum;—the termination of that and the commencement of the jejunum were also inflamed, and in the other intestines, which were quite empty, I found patches of inflammation in detached places. I believe there had existed an obstruction in the bowels: the liver I found very much inflamed, particularly on the concave surface of the right lobe, where there were two or three enlargements of the ducts containing a quantity of flukes. The heart was very much enlarged, and the lungs exhibited patches of inflammation: the kidnies were in an unhealthy state. Lastly, I proceeded to the brain, and observed between the tunica arachnoides and pia mater patches of extravasation and inflammation, both on the cerebrum and cerebellum. I did not observe any thing peculiar in the ventricles, nor in the spinal cord.

The next subject I was shewn was a live buck, strongly affected with the disease: he was recumbent when we approached

him, looking wistfully round, and nibbling his side near the abdomen, as if in violent pain. As I approached he sprung up, looked very wildly, made a gurgling noise in the throat, and bolted at the top of his speed over and against every thing in his course. We pursued him on horseback for a considerable distance, and when we reached him we found him near a stream of water, butting furiously against the ground, foaming at his mouth, and apparently endeavouring to drink, but I think he could not. As we neared him, he bolted forward again amongst the herd, still making this gurgling noise: the herd immediately separated in great terror. We still pursued him, and ultimately he was ordered to be shot for my inspection; he was accordingly shot through the heart from behind the left shoulder.

I then proceeded to dissect and examine him also, and found the appearances much the same, excepting that the membrane lining the larynx was not so *highly inflamed* as in the former subject.

The park has been stocked with deer for the last fifty years, so that it cannot be thought that the herbage had any effect. A suspicion had arisen that they were poisoned; but from the slight appearance of inflammation in the stomach, I could not entertain that opinion, yet I did not analyse the contents of the rumen. There were Scotch cattle and sheep grazing on the same herbage, but none of these have exhibited the slightest symptoms of the disease.

I should mention, that the practitioner I have spoken of had examined many brains previously to my visit, and had found them all more or less inflamed. The keeper told me that one of the diseased animals had bitten him in the hand.

ON REDWATER.

By a Veterinary Surgeon.

I HAVE long purposed a communication on the disease called Redwater; but the truth is, I wished to see your ideas on the subject, which I have now in the Farmer's Series; and, as I rather think you are not quite satisfied as to the nature and cause, I am willing to lay before you the way in which I have considered the matter; and though it may not advance you much, there may be something new in the manner.

I find redwater is confined to particular farms, and there also differing in degree as to frequency, if not as to intensity. That it is most prevalent in the months of May and June, but differing in extent in different seasons, and afterwards brought on by a

change of weather, as was the case this year (it had scarcely been heard of till towards the middle of June), when, after some days' rain, it came on with more than ordinary violence, and was fatal to a considerable extent. That it affects cattle brought fresh on almost certainly, and that more severely than those which are natives. That it affects those which appear to be in the best condition as commonly as those which are not. That no age is exempt, not even calves in the pen; but if there is a difference, milch cows are most frequently attacked; next to them, yearlings: and that it but rarely affects the same cattle twice. The first appearances are often so slightly marked, that those accustomed to the disease, and on the look-out for it, are frequently unaware of the affection until they see the urine: there is frequently a slight purging, and staring of the coat; but the beast often continues to feed for a day or two, and it sometimes passes off without any thing being done. In general, however, after the first day the appetite is gone; rumination is no longer performed, nor digestion either; in short, the different functions are nearly all suspended, while the secretion of urine is increased, and that mixed with blood, evidently from the kidnies. The pulse, from being much quickened, soon becomes imperceptible at the jaw; and even the heart is often not to be felt; while in some cases a violent palpitation comes on, and so loud that it may be heard at some yards distance, but which after a time ceases, and generally some hours before death, when that is the termination. I have said that digestion ceases, and I may say nutrition also, in all acute cases; in consequence of which the discharge of blood by urine (though not very great) in the course of two days often drains the system apparently to the last quart. The stomachs and bowels are, I think, only torpid (and often for a time not to be acted upon); for, on dissection, though they may be said to be full, their contents are often sufficiently moist, particularly when plenty of fluids have been given. There is, I believe, no disease which presents invariably the same appearances after death, depending, in some measure, upon the duration, and also upon the treatment which has been adopted; therefore there are, doubtless, differences in this: but in all the cases which I have examined, and where the patient did not die of the doctor (which is often the case in more ways than one), the following are the chief:—there has scarcely any blood remained; the heart considerably marked with dark spots; the liver of a brown colour, apparently from there being no blood in it, of rather a spongy texture; and the gall-bladder containing some quantity of almost colourless bile; the kidnies flabby, and internally red, apparently from infiltration of blood.

Having stated something like the appearances living and dead, we will consider what cause or causes are likely to produce them. There are no appearances indicating the existence of common, or, as the old nosologists called it, phlegmonous inflammation; and therefore I will pass that by, and call your attention to a class of diseases called fevers in the human subject (and which, though not generally allowed to exist at all, will, I doubt not, sooner or later, be more distinguished as affecting inferior animals), by which I understand certain affections, produced by unexplained causes (and limited to particular districts), in which the different functions are suspended or destroyed, according to the violence of the attack or the constitutions and circumstances of the affected, where, though some assistance may be given and injurious treatment prevailed, yet nature appears to struggle for recovery, and obtains it often by some particular secretion or discharge. From this class then, if we may reason from analogy (and that we must often), may be found some one which will bear a comparison with our subject, and which I need not enlarge upon, or say more in the way of cause only, that very similar effects are produced by some vegetable poisons, particularly meadow saffron, and which is common on farms where redwater is met with. Moreover, there are cases met with at the same seasons, supposed to be occasioned by saffron, and where the symptoms are exactly the same, with the exception of the urine not being affected. In one case, which occurred this year, a considerable quantity of colchicum seed was found in the stomach. Another case, which I attended myself, was as like redwater as possible in every thing except the urine, and got well from similar treatment; but another case occurred within a few days, in which the urine was red, and therefore my attendance was not required for two days, and the cow died within a few hours after I saw her. That vegetable poisons will produce the general symptoms there can be no question; and arguments may be adduced on each side so nearly balanced, that it must, I fear, for the present remain undecided; but the best case to shew that it is taken in with the food, is that of a cow that was bought early in the spring, and put upon hay grown upon a farm which is notorious for producing the disease; this, however, though worthy of remark, is not conclusive.

With regard to the difference supposed to exist in red and black water, I believe the disease to be the same, and the difference in the colour of the urine arises from the blood not undergoing the natural change by circulating freely through the lungs; and therefore, in the most violent and advanced stages it is much darker, and colours the urine in the same degree. Then, as to the

distinctions of chronic and acute, the only difference which I have observed is, that some cows, old ones in particular, though they discharge bloody urine, are somewhat off their feed and constipated, yet continue to ruminate and secrete milk, though less than ordinary, a proof that, though operated on by the same causes, it is in a different degree, or with less effect.

I have no space for a bare outline of treatment; but if I had, I should not have time to do it now; and therefore, if desirable at all, it must be at some future time.

THE VETERINARIAN, SEPTEMBER 1, 1834.

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

VETERINARY SCHOOLS—ABOU-ZABEL.

THE establishment of the first veterinary school in Africa deserves to be recorded in the leading article of our Journal, which is a translation of the Report of M. Girard, Director of the Veterinary School at Alfort, to the Royal Academy of Medicine at Paris. We give it at length, and in a succeeding number we will present our readers with a most gratifying account of the progress of this Egyptian college.

"Gentlemen,—M. Hamont, director of a veterinary school established at Abou-Zabel, in Egypt, has sent to the Academy, through the medium of Dr. Leuret, an account of the transactions of that school during the scholastic year of the hegira, 1246-1247 (1831-1832). You have appointed a commission, consisting of Messrs. Bouley, Andral, jun., and Girard, to report on the nature and merit of that Report, and also of the claims of that veterinarian to your favourable consideration. Charged by your commission to fulfil this honourable duty, I shall trace from the beginning the history of the new school of Abou-Zabel; I shall enumerate the services rendered by M. Hamont; and I shall glance at those which we have yet to expect from his zeal and perseverance.

M. Hamont, a distinguished pupil of the school of Alfort, and

veterinary surgeon to the fourth regiment of chasseurs, was selected, agreeably to the request of the Viceroy of Egypt, to travel into that country, in order there to practise the veterinary art. He left France in 1828, with another pupil from the school of Alfort, M. Pretot; and these two veterinarians arrived at Rosetta, in the neighbourhood of which there then prevailed an epizootic, very fatal to horned cattle. This circumstance afforded the newly disembarked adventurers the opportunity of evincing the knowledge they possessed of the different branches of their art, and of proving the utility and importance of that art, by plain and manifest facts; a mode of proceeding the best calculated to dispel the deeply rooted prejudices with which they had to contend, and to conciliate a people plunged for ages in ignorance and misery.

The opportunity was fortunate: Messrs. Hamont and Pretot availed themselves of it; and the marked success which attended their efforts to conquer this disease, disposed the minds of the people towards them, and also gained the favourable consideration of some of the Ulemas. These first steps were attended by the most important results. The epizootic was not confined to the town of Rosetta and its immediate neighbourhood, but extended its ravages far around, and in many places was exceedingly fatal. Our two veterinarians, separating from each other, journeyed in every direction in which the resources of their art might be most beneficially employed.

These excursions made them better acquainted with the state of the domesticated animals of that country, their general management, their diseases, and the improvements which might be effected. In reporting their proceedings to the proper officers, they described all the evils which they had observed, the good which they had effected, and the greater good which they thought they might be able to accomplish. They principally pointed out the necessity of obtaining well instructed persons, and in sufficient numbers, to combat with advantage these epizootic pests, which desolated the country and destroyed the greater part of the cattle; and, finally, they proposed the formation of a school like that of human medicine which was established in

Alexandria in 1825. This proposition, which accorded with the previous views of the government, could not fail of being favourably received: the two veterinarians were authorised to establish immediately in Rosetta the school they had recommended, and to superintend the instruction of that school.

Permit me, gentlemen, to remark the coincidence which existed between the establishment of schools in France, and now in Egypt, for instruction in veterinary medicine. In the one country and the other the epizootics gave birth to the veterinary institutions. The epidemics of the last century not only led to the establishment of schools of this kind, the first of which was opened in Lyons in 1760, but also the formation of the Royal Society of Medicine in 1776.

The want of convenient buildings; the incalculable difficulty resulting from the difference of language; the deficiency of interpreters; and the different manner of setting to work about every thing, paralysed the exertions of our young countrymen, and the new school did not open auspiciously. An unfortunate circumstance increased every difficulty—Pretot died at Smyrna, and Hamont remained alone. Dispirited by such a complication of untoward events, he thought of abandoning all, and returning to France; but mature and better reflection determined him still to labour in the important work which he had undertaken, and to adopt other and more zealous efforts to accomplish the purpose to which he had devoted himself. His school, banished as it were in Rosetta, was in a false position, and wanted the elements essential to its prosperity. He resolved to petition that it might be translated to Abou-Zabel, as was the school of human medicine under the direction of Clot-Bey. Every thing seemed to have been already planned to ensure the success of this project. Clot-Bey had long wished that the veterinary school should be removed from Rosetta to Abou-Zabel, and M. Pariset had already petitioned Mehemed Ali on this point. The way being thus prepared, no other obstacle was opposed to the removal of the school, and its translation to Abou-Zabel was speedily effected.

A new æra seemed now to dawn on the infant art, and M.

Hamont began to conceive bright and well-founded hopes of the future. He immediately employed himself in organizing the mode of instruction; nay, he commenced it before the buildings were completed; and he soon had to boast of a sufficient number of pupils. I pass over in silence the interested and contemptible opposition which a few persons raised against him; for I rejoice to say, that the talent and good intention of M. Hamont were soon rightly appreciated, and they who had been most adverse, ranged themselves on his side, and became his firmest friends.

It was easy to foresee that the veterinary institution, brought into the very neighbourhood of the capital, would soon excite more particular attention from the government, and that the school of human medicine would lend it the most efficacious aid. In effect, the viceroy did not delay to encourage, and that by his presence, an infant school, of the beneficial influence of which on the country submitted to his government he augured so well. The visit of Mehemed Ali was followed by those of the ministers and all the great personages of Alexandria, and particularly of Ibrahim Pacha. That general afforded an especial patronage to the new school; he caused it to be decreed, that the veterinary surgeons of the cavalry should there receive their education; and M. Hamont was charged to organize this new branch of service on the plan of that of France.

The hopes that had been formed with regard to the school of human medicine were more than realized. M. Clot associated himself with his fellow countryman, M. Hamont, in every kind of labour; he assisted him by his valuable counsel, and he placed at his disposal every thing that could be of use to him in the course of his veterinary instructions. M. Pharaon, and the Sheik Moustapha, who were attached to the school of human medicine in the quality of interpreters and translators and professors of foreign languages, consented to discharge the same duties in the veterinary school. They translated for the use of the pupils, Girard's Veterinary Anatomy, in 2 vol. 8vo; Bourgelat on the Knowledge of the Exterior of the Horse; and also Girard on Inguinal Hernia. It is probable that, since the last communication from the school, they have translated other works, and have

completed one of the last edition of the "Treatise on the Foot of the Horse."

At the end of June 1832, the veterinary school of Abou-Zabel contained eighty students, and stables for one hundred sick animals, with room to class them according to their various diseases. The anatomy and diseases of all domesticated animals were taught; the exterior conformation of the horse, and all surgical operations on quadrupeds; and the instruction which they received was illustrated by practice on the diseases of sick animals, a great number of whom were always in the infirmary of the school: the students attended on lectures on botany, pharmacy, and the practice of physic in the school of human medicine. In addition to this, lessons were given in the French language by the two gentlemen already mentioned, and who contributed so much to the prosperity of the three establishments formed at Abou-Zabel."

M. Girard then alludes to the annual examination of the three schools—of human and of veterinary medicine, and of pharmacy; and he properly adds, that the prosperity of each must be assured by such an union—that the success obtained by the one must turn immediately to the advantage of the other—that a comparison between the diseases of the human being and the brute creation would be presented every day, and, as it were, every moment; and that these being observed and studied through all their stages and changes, could not fail of advancing a knowledge of medicine, and placing it on sure ground: and he concludes this portion of his report by saying, and truly so, that "the benefits resulting from these two schools, united by their locality and by perfect good feeling between their professors, must be incalculable."

He returns to M. Hamont, and says that, "he was educated at the school of Alfort, in which he always distinguished himself at the quarterly examinations; that he was appointed private teacher of pharmacy in 1823, and obtained his diploma as veterinary surgeon in 1824; that during his abode in Egypt his whole time was devoted to the cultivation of veterinary science, and that his correspondence with his former instructor was con-

stant, and abounded with important observations on the domesticated animals of these countries, and the diseases to which they were most subject. Among other things, he says that, "the breed of cattle in Egypt is generally poor in constitution, and neglected. Epizootic diseases frequently effect the most dreadful ravages among them; sometimes they devastate the country to such a degree, that men are harnessed to the plough and to the cart, in order that the land may be, although imperfectly, cultivated, and some subsistence obtained."

The buffalo and the camel rank among the domesticated animals of Egypt, and are exceedingly serviceable. Asses are very numerous: they are docile; they are fed upon almost anything, and are well suited to arid and sterile countries.

The camels are very subject to mange, and are ordinarily cured by the Bedouins, with a liniment composed of oil and sulphur. In obstinate cases they have recourse to tar; and when every thing else fails, they apply as a remedy *par excellence*—the *ne plus ultra*,—an oil extracted from the seeds of the colocynth of Sennaar.

Glanders and farcy are common in these districts of Africa; but there is much analogy between the farcy there and leprosy. A belief in the contagiousness of farcy and glanders seems not to be perfectly established in Egypt; for the people never destroy the horses that labour under these diseases.

An affection rare in our climate, but frequent in Egypt, is, softening of the substance of the liver in the horse. M. Hamont failed in the treatment of this disease when he employed antiphlogistic means; but with acetate of potash, and calomel and bitters, judiciously combined, he frequently succeeded.

M. Girard thus concludes his report:—"These extracts from his correspondence will, I am sure, suffice to shew the indefatigableness of this estimable veterinarian, who, contending against a thousand difficulties, and amidst all the embarrassments with which the establishment of so grand an institution for veterinary instruction must necessarily surround him, could find sufficient time to occupy himself in the pursuit of science. It is incontestible, that since his sojourn in Egypt, M. Hamont has

effected much, and much that is useful; and if it is permitted to judge of the future by that which has passed, your reporter does not hesitate to say, that he will render the most signal services to veterinary medicine."

It will be our pleasing duty, in an early number, to shew to how great an extent the prediction of the reporter was verified.—EDIT.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

CATTLE; *the Management, Breeds, and Diseases; with a copious Index. Published under the Superintendence of the Society for the Diffusion of Useful Knowledge.* London: Baldwin and Cradock, Paternoster Row.

THIS work is at length completed. We must not do more than insert the Preface, which will display the aim and object of the writer. How far he has accomplished them, his readers must judge.

"PREFACE.

"In preparing this volume on 'Cattle,' the author has often had reason to deplore the want of materials, and which he has been enabled to obtain only by correspondence with competent individuals, and the personal inspection of the present state of cattle in the greater part of the British empire. To those noblemen and agriculturists from whom he derived information, the more highly estimated by him because most readily and courteously granted, he begs to return his warmest thanks. His obligation to Mr. Berry for the admirable history of the Short Horns will not be soon forgotten.

"He has endeavoured to lay before the public an accurate and faithful account of the cattle of Great Britain and Ireland. He does not expect to please every one who reads his work or who has contributed towards it; for long experience has taught him that, although there is some excellence peculiar to each breed, there is none exempt from defect; and the honest statement of this defect will not satisfy the partisan of any one breed, or of any variety of that breed. He has passed lightly over the subject of the general management of cattle, in order to avoid trenching on

the work on 'British Husbandry,' now publishing under the superintendence of the Society.

"The diseases of cattle was a favourite topic with the writer; but here, too, he painfully felt the deficiency of materials for a treatise worthy of such a subject. One branch of veterinary science has rapidly advanced. The diseases of the horse are better understood and better treated; but, owing to the absence of efficient instruction concerning the diseases of cattle in the principal veterinary school, and the incomprehensible supineness of agricultural societies, and agriculturists generally, cattle have been too much left to the tender mercies of those who are utterly ignorant of their structure, the true nature of their diseases, the scientific treatment of them, and even the very first principles of medicine.

"With the few practitioners scattered through the country, who had praiseworthily devoted themselves to the study of the maladies of cattle, the author entered into correspondence; and he derived from them a liberal assistance which does honour to the profession whose character they are establishing.

"To many of the contributors to that valuable periodical, 'The Veterinarian,' he is under considerable obligation, and which has been duly and gratefully acknowledged. He has likewise had recourse to various foreign authorities; for, although far behind us in the cultivation of the breed of cattle, many continental writers, and continental agriculturists generally, have set us a laudable example of attention to the diseases of these animals.

"The author ventures to hope, that the information derived from these sources, as well as from his own practice, may have enabled him to lay before his readers a treatise on 'Cattle' not altogether unsatisfactory; and that, particularly with regard to their maladies, so often grossly misunderstood and shamefully treated, he may have succeeded in laying down some principles which will guide the farmer and the practitioner through many a case heretofore perplexing and almost uniformly fatal. At all events, he will have laid the foundation for a better work, when common sense, and a regard to the best interests of husbandry, shall have induced agriculturists to encourage, or rather to demand, a higher degree of general education in veterinary practitioners, and shall have founded, south of the Tweed, those schools for professional instruction in every branch of the veterinary art which have been successfully established, and are honourably considered, on the continent.

"W. YOUATT."

Extracts.

Old Rupture of the Diaphragm.

By M. Vogeli, *of Lyons.*

On the 30th of April 1831, about 5 P.M., I was desired to examine a middle-sized bay horse, in unusually high condition. He had violent colic; he was continually lying down and rising again; his respiration was peculiarly jerking, and during the few moments that he stood, he furiously pawed the ground. He had scarcely finished his afternoon's feed, and therefore I did not suspect the existence of indigestion, and I refrained from bleeding. I made them rub him, and cover him, and trot him gently, while we prepared an emollient injection, and an infusion of Roman chamomile as a drink. These seemed to relieve his pain, and he continued tolerably quiet during an hour and a half: then the pains returned with greater violence than ever. I administered an ounce of sulphuric ether, and had him again led out of the stable. He there struggled, and rolled, and beat himself about, until, covered with foam and sweat, and apparently worn out with fatigue, he threw himself on the litter, and was quiet for a little while.

The pains then returned anew: he couched like a dog, with his fore-limbs doubled under his chest, and his head stretched out on the litter, and in that position he made frequent attempts to vomit, and anti-peristaltic intestinal commotion was evidenced by a peculiar working of the flanks, and certain unnatural efforts which were made every instant; the tail also was in continual motion in an oblique (bi-lateral) direction. In this state of things I administered an ounce of laudanum in a pint of water.

At this period M. Jouygla, first veterinary surgeon to the squadron, arrived accidentally at Douai, and came to see my patient. The result of our first consultation was almost a negative one; but on a second examination an hour afterwards, and an attentive observation of the symptoms, he pronounced that it was some abdominal rupture, and that death was at hand: the horse died nine hours afterwards. I confess that this prognosis threw a perfectly new light on the case, and that I had not previously dreamed of the possibility of a rupture.

On the following morning we examined the carcass of our patient, and observed the following lesions:—More than seven yards of the small intestines, and in the highest state of inflammation, had penetrated into the thoracic cavity, through an aperture more than three inches in circumference, and situated rather more than two inches below, and at the side of the œsophagean

aperture, and the glistening edges of which, covered by a mucous membrane, indicated that it was of long standing. This mass of intestine being drawn back into the cavity from which it had escaped, permitted us to trace the passage of a portion of mesentery through the same opening, and which adhered by a considerably large surface to a portion of pleura covering a rib that had been formerly fractured, and the inaccurate but solid union of which had caused a considerable protuberance into the thoracic cavity. The fracture had been produced by a fall, which at the same time, doubtless, had caused the rupture of the diaphragm.

During the four months that the horse had been in the squadron, it had not had the slightest colic, and was in good condition. Astonished at the continuance of this healthy state, when there had for a long time existed so likely a cause of instantaneous death, we examined the abdomen very carefully, and we discovered on the diaphragmatic face of the liver a prominence which had until lately completely filled the aperture in the diaphragm.

Journal Theorique, 1833, p. 27.

Spontaneous Rupture of the Tendon of the Flexor Pedis-Muscle.

By M. Pattre, *4th Reg. of Cuirassiers.*

In October 1827, a strong mare, ten or twelve years old, was attacked by intense pneumonia, which yielded to the strict use of antiphlogistic treatment; but at the very moment that she began to be convalescent, we perceived that her hind fetlocks were swelled, hot, and tender—it was painful to her to stand, and which she indicated by constant groaning. The fetlocks were well fomented daily. Soon afterwards the animal, whose pasterns had been short, and who went on her toe, appeared to have them materially lengthened, and the fetlock came almost in contact with the ground; the whole of the hind quarters were lowered; she could with difficulty stand; we could almost see her waste away, and, there appearing to be no hope of her recovery, she was destroyed.

Neither the chest nor the abdomen presented any thing worthy of being reported. I carefully examined the fetlocks, and observed that the cellular tissue was infiltrated—that the natural pearly whiteness of the tendons had given place to a yellow tint, so that they very much resembled the ligament of the neck. I cut longitudinally into the sessamoidean sheath, formed by the tendon of the perforatus, and I saw that the perforans tendon was ruptured. The fibres of the disunited portions were of an unequal length, and had a fringed, ragged appearance: the synovial membrane enveloping that portion of the tendon pre-

sented no other change than considerable injection of the capillary vessels. The appearances were precisely alike in both legs.

Quadrupeds affected with thoracic disease, not being able, like the human being, to rest on the back, but forced long to maintain a standing position, in order to avoid that painful pressure on the chest (or rather that loss of power over the auxiliary respiratory muscles of the chest.—Ed.) which results from lying down, suffer much pain from weariness of the limbs, and these limbs are often seriously injured. Thus, at the close of these diseases, we have inflammation of the foot, contraction of the tendons, swellings about the knee or hock, &c. These have been observed by many veterinarians, and I do not speak of them as discoveries of mine; but I believe that rupture of the perforans tendon, connected with these diseases, is a new fact.

Journal de Méd. Vét. 1830.

Rupture of the Tendon of the Perforatus.

By the same.

At the end of June 1831, I examined a mare labouring under the last stage of pulmonary phthisis. She was treated for this disease, but without beneficial effect.

On the 28th of July she was led out to the parade with the regiment, although the soldier was forbidden to do it; he mounted her, and she was trotted with the rest; when all at once she became covered with sweat, she breathed laboriously, and she could scarcely move. The soldier dismounted—she was led with much difficulty to the stable, and I saw her. She was covered with sweat, her breathing was quick, her nostrils dilated, her eyes sunk, her pulse full and frequent, her croup and hind quarters depressed, her hocks straighter than in their natural position, the flexor tendons of the hind limbs stretched, and painful, with evident enlargement above the fetlocks, and the skin of the anterior face of the fetlocks forming several transverse folds. It was evidently painful to her to stand—every motion indicated excessive pain; she lay down as much as she could, and raised herself with great difficulty. We gave her up as lost; we were assured that a tendon was ruptured, but we could not determine whether it was the perforatus or the perforans.

We bled her, fomented her legs, administered injections, and put her on spare diet. She remained until the 2d of August, generally stretched upon her litter, eating and drinking every thing that was given to her. It was with great pain that she rose, and she lay down again immediately. She got thinner every day; and a mortal disease having existed previously to this injury of the tendons, we destroyed her.

The chest presented all the lesions that characterize pleuro-pneumonitis. There was considerable effusion of serous fluid, in which masses of flocculent albumen were swimming, and there were numerous and large adhesions between the costal and pulmonary pleuræ. The lungs, diminished in size, were, in a manner, *atrophied*; numerous tubercles about the size of a millet seed were observed, and the left lung offered towards its centre a large white degenerated substance. The abdomen did not contain any thing remarkable.

From the hocks to the fetlocks the cellular tissue was infiltrated by a fluid resembling olive-oil. The tendons of the perforatus, from the place where they form the sheath of the sessamoidean portion, were completely ruptured—their fibres were of a somewhat yellow colour, and easily separated from each other, as if they had been macerated. The perforans tendon and the suspensory ligament of the fetlock were sound. The lesion was the same in both legs.

The editor asks, in a note, why rupture of the tendon of one only, whether the perforatus or perforans, should render the horse unable to stand, while division of both of them does not render him incapable of ordinary work?

Journal de Méd. Vét., 1832, p. 22.

Inflammation of the Flexor Tendons and their Sheaths.

By M. Leblanc.

A mare, eight years old, and that had worked hard during the last four years, had a vesicular cutaneous eruption, which in a short space of time covered a great part of her skin. Proper treatment being adopted, it disappeared from her trunk, and, all at once, the vesicles covered the two hind limbs, and particularly the right one. I recommended certain applications, which were punctually but most unskilfully applied. The groom, in order to avoid the reproaches which he merited, fomented and cleaned the legs with bran and water, and, in order to do it more effectually, he used a hard brush. By this he excited an intense inflammation, not only of the skin, but of the subcutaneous tissue, and even those more deeply seated.

Nothing could arrest the progress of the inflammation—the effects of which were, first, a multitude of boils, which ulcerated deeply, and destroyed the skin of the pastern; second, the complete destruction of the sheath of the perforatus tendon; and, third, a rupture of the perforans.

The perforans and its sheath offered the following lesions in he parts that were not destroyed: on the limits of the solution of

continuity the tissue had a shred-like appearance, of a yellow colour, and of a consistence becoming more and more soft as we approached the actual rupture: the tissue there seemed to be divided by red striæ, resembling cellular interfibrillary laminæ. The serous membrane which lined the sheath was injected, or rather its vessels were turgid beyond measure.

Gleet in Dogs.

By M. Renault, *Professor at the Veterinary School of Alfort.*

During the last six months many dogs have been brought to the infirmary of the school of Alfort with a purulent discharge from the prepuce, resembling gleet in the human being. The general health of the animal does not seem to be affected; but it is a disease altogether local. It consists of a muco-purulent secretion, more or less abundant, from the internal surface of the sheath, and sometimes, although but rarely, from the external surface of the glans. It is of a yellowish white or pale green colour, adhering to the hair which surrounds the opening into the prepuce; and it sometimes escapes in a considerable quantity when the prepuce is pressed upon in a direction from behind forwards. In one dog it was accompanied by acute inflammation of the preputial mucous membrane, which was red and highly injected. In the greater number of cases it is a mere chronic discharge without injection or tumefaction of the surfaces, which, on the contrary, have rather a pale livid aspect, and pressure upon them does not produce the slightest pain.

Although I have never been able to obtain more than vague accounts of the causes which were likely to have produced this discharge, I have always thought that it depended on frequent connexion with the female, and especially with those of a small size*. M. Delafond and myself have made many experiments in order to determine whether the matter thus discharged possessed any virulent properties. We have rubbed it on the membrane of the prepuce, and on the glans of several dogs; we inoculated the prepuce of one with it, but without any result that could warrant us in supposing that it contained any contagious property. We have not made any experiment on the bitch.

Among all the modes of treatment that we adopted, we have been most successful when we have injected the "Liqueur de

* This is not true. Petted dogs, that are carefully kept from all access to the bitch, quite as often have this discharge as those that range at the most perfect liberty; and I have seen it in poor emaciated dogs as frequently as in those that were in the highest condition, and apparently most susceptible of venereal excitement.—Y.

Van-Swieten" into the prepuce, with double the quantity of the bi-chloride of mercury*.

I will confine myself to the three following cases in illustration of this.

Case I.—A dog, eight months old, has had a purulent discharge from the prepuce during the last month: the matter was thick, of a green yellow colour. The animal expressed no pain on pressure; was lively, and in good health.

Mucilaginous injections were first tried without success; then injections of the liq. plumb. superacet. much diluted. This made the membrane pale, but the discharge was not lessened. Two-drachm doses of the balsam of copaiba, in a decoction of sarsaparilla, were then given twice, but relinquished, on account of the difficulty of administering them.

Twenty days elapsed, and no ground having been gained, the "Liqueur de Van-Swieten" was had recourse to, diluted with eight times its weight of water, and the proportion of water diminished every day. On the ninth day the animal was dismissed from the infirmary, the discharge having ceased.

Case II.—A dog was brought to the infirmary to be treated for fistula lachrymalis. On the following day gleet was observed; the membrane of the prepuce was pale; there was not any tenderness, and the discharge was very thick. The solution of corrosive sublimate was resorted to at once, and in eighteen days the discharge had ceased. It could not be perceived even on pressure of the prepuce.

Case III.—A dog was admitted that had had discharge from the prepuce during six months, and for which copaiba and purgatives had been resorted to without effect. The discharge was evidently not only from the membrane of the prepuce, but also from the urethra. Eruptions had likewise appeared around the base of the ear, and also on the eyelids.

The liquor was injected into the prepuce, and also into the urethra; and an ointment of sulphuretted mercury was applied to the ears and eyelids. The eruptions soon disappeared, and in twelve days the dog was dismissed, free from all complaint.

* Moiroud gives the following as the formula of the "Liqueur de Van Swieten" used at Alfort.

Bi-chloride of mercury (corrosive sublimate) one drachm (three scruples, and each scruple containing twenty-four grains).
Alcohol, three ounces.
Distilled water, five pounds (16 oz. to the lb.)

The French give this to the horse in doses of a pint for glanders, farcy, and old and obstinate cutaneous diseases; and externally they apply it in cases of mange, obstinate cutaneous eruption, grease of long standing, and indolent ulcers.—Y.

On Breeding Horses.

By T. A. Knight, *Esq., of Downton, Herefordshire.*

Having introduced, for the use of my tenants, a high-priced stallion, of the breed of the large London dray-horse, I wish to state to agriculturists the grounds upon which I anticipate much advantage from the introduction of so large an animal. He will, I have reason to believe, be, when full grown, not less than seventeen hands high, and very compact in form.

I conceive myself to have proved, by many experiments, of a part of which an account was published some years ago in the Philosophical Transactions, that the length of the legs of the offspring of all those animals which nature has intended to accompany their parents in flight, at an early age, is governed wholly by the habits of the female parent. This tribe of animals comprehends the horse, the cow, the sheep, and deer, and many others. If the female parent be of low stature, and descended from a breed of a similar form and size, the length of the legs of the offspring will be short, and will not be increased in length, though they will in strength, by any influence of its male parent, however tall and large that may have been; and the converse of this proposition will be found to be equally true.

The experience of almost every farmer must have taught him that horses with drop shoulders and bodies, and capacious chests, are more capable of bearing hard and long-continued labour than those of which the shoulders, and of course the chest, are shallow, and the legs long; but comparatively few know how rapidly the powers of draught of any animal mechanically decrease with the increasing length of the legs comparatively with the depth of the shoulders and body. If a horse, proportioned as English horses now generally are, be sixteen hands high, his fore legs, measured from the elbow-joint, will be about three feet, or nine hands high, and his shoulder about two feet four inches, or seven hands high. If such a horse be able to raise, by means of a cord passed over a pulley, a weight of a thousand pounds, another horse, similar to that in every other respect, except that of having its legs eight inches shorter, would, on account of the mechanical advantage of its form, be able to raise twelve hundred and fifty pounds, or one-fourth more, with considerably less exertion; for his power would increase with the diminished length of his legs, nearly in the same proportion as the power of the weight upon the longer arms of the steelyards is increased by being made to recede from the point of suspension: and if the length of the leg of such horse, comparatively with the depth of the shoulder, were further diminished, its power would increase in an accumulating ratio. The enormous strength of a bull of mature age affords familiar evidence of the truth of these

positions; and I doubt much whether the offspring of a Norwegian poney, and a strong and low draught mare, would not be found capable of drawing a heavier weight up hill to any considerable distance, than the largest horse of the ordinary form and proportion; whilst it would not, probably, exceed two-thirds of its weight, nor require more than two-thirds the quantity of food; and it would possess much more activity, and be much less subject to accidents. And I have good reason to believe that more perfect animals for supplying mankind with food, may generally be obtained by cross breeding from females of small and male animals of large size, than from any breed of fixed and permanent habits, relatively to size.

Hereford Times.

Miscellanea.

On a Barnardine Dog.

By Wm. Sotheby, *Esq.*

Friend of mankind! thy service done,
Rise thou no more from troubled rest;
Nor, watchful of the setting sun,
Where pilgrims wander, widely quest,
As if their sufferings were thine own,
And thou wert born for man alone.

Thou never more, when raves the wind,
Shalt o'er the Alps thy master guide;
No more, when drifting snow-flakes blind,
Shall turn his steps from death aside,
Hang on his hand, and woo him back,
While instinct yet retains the track!

Thou ne'er again, beneath the snows,
Shalt search the cleft and treacherous cave,
And, conscious of sleep's dread repose,
Arouse the slumberer from the grave;
And o'er him breathe thy vital breath,
And, by thy warmth, reclaim from death!

Thou ne'er again shalt gladly bear
The pannier, yoked thy neck around,
Press to the famished lip its fare,
And bring the band to close the wound;
And, by thy healing tongue, supply
The balm that lessens agony!

Ah! thou no more shall homeward bring
The infant through the frozen air;
And, as with hand half human, ring
The convent bell, nor quit thy care,
Till on the hearth, before the blaze,
Thou on his opening eyelids gaze!

Long on thy loss that hearth shall dwell;—
Friend of mankind! farewell! farewell!

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MR. YOUATT'S VETERINARY LECTURES,

DELIVERED AT THE UNIVERSITY OF LONDON.

LECTURE XLIV.

The Diseases of the Sensorial System.—The Effect and Treatment of Compression of the Brain in Fracture of the Cranium. —The Hydatid in the Sheep.—The Symptoms and Treatment of the Disease.

I HAVE ventured in a former lecture to hint at the connexion of the medullary portion of the brain with the mere animal principle, and that of the cortical or cineritious part with the intellectual one. I have traced in all our domesticated quadrupeds the prevalence of the former, and the comparatively little development of the latter: and thence it arose, that while the preponderance of animal power enabled them to discharge the services we required from them, the deficiency of that portion in which the various impressions received by the senses are registered and compared, limited their intellectual capacity, and preserved them more securely our slaves. This will enable us to account for the fact, that there are few or no diseases in quadrupeds which strictly and primarily affect and influence the intellectual principle. Quadrupeds may occasionally have the same perverseness of temper, the same vicious habits, that disgrace the human being —sometimes the same ungovernable passions—but nothing of that disturbance of mind, that marked derangement of judgment, which we are accustomed to term insanity. There are, however, certain mechanical affections of the brain which are often productive of fatal consequences. These are principally referrible to compression and congestion, or to inflammation.

Effects of Pressure on the Brain.—Fracture.—I have stated, that while considerable portions of the cineritious part may be cut away, without the animal seeming to be scarcely conscious of the act, the smallest pressure could not be made on the brain without impairment of consciousness, or of the power of voluntary motion. The first illustration we have of this, is in fracture of

the cranial roof. The broad and flattened expansion of the forehead in the ox, and the use which is made of the horn as a weapon of offence, expose that part of the cranium to occasional fracture. A cow received a wound in this manner. It entered the scull about an inch and a half above the right orbit, and in a line from the internal angle of the orbit to the parietal ridge. She was seen in the morning feeding as usual, but with a glairy bloody fluid running from the corresponding nostril. The herdsman having introduced his finger to ascertain the depth of the wound, the cow fell as by a stroke of lightning, but after lying during two or three seconds insensible, she got up and began to graze again.

A veterinary surgeon was sent for, who, after very cautiously introducing his finger, ascertained that the horn had penetrated through the frontal sinus and the internal plate of the cranial roof, and had actually reached the brain; he contented himself with bleeding her, and administered a dose of physic, and, having placed a pledget of tow over the wound, he left her, having ordered her to be confined to the cow-house. She fed and ruminated as usual; but on the third day, when she was taken out to the water, she had no sooner quitted the stable than she began slowly to turn round and round from the left to the right. She was stopped, and led a little farther on, when she commenced the same rotatory motion, and still in the same direction. She was taken into the house and fastened up until the medical attendant could be sent for, who ordered her to be immediately destroyed. The horn had penetrated into the right lobe of the brain, through the lateral ventricle, and into the corpus striatum; but the inner plate seemed to have been retracted with the horn, and its fractured edges projected into the frontal sinus, and did not press on the brain. Inflammation marked the course of the horn through the brain, and decomposition had taken place, attended by a most fetid smell.

In general, however, fracture of the scull is accompanied by pressure of the bone on the brain; and this produces loss of consciousness to a greater or less degree, and usually complete coma.

If it is a horned beast, the practitioner will compare the possibility of giving relief with the probable injury that the carcass will sustain during the prolonged attempt to effect a cure. If he decides on the adoption of surgical means, he will have recourse to the trephine, and then endeavour to raise the depressed pieces of bone by means of the elevator; but in the majority of cases, and if the animal is in tolerable condition, he will consign it at once to the butcher.

The cranium of the horse is so securely defended by the yielding resistance of the temporal muscle, that fracture rarely occurs, except at the occipital ridge; and the depression of bone is there so considerable, as to produce complete coma, and bid defiance to all surgical skill.

Hydatids in the Brain.—Symptoms.—One of our patients affords us too frequent instances of the effect of chronic compression of the cerebral substance. After a severe winter, and a cold and wet spring, many of the yearling lambs, and particularly those that are weakly, exhibit very peculiar symptoms of disease. The malady usually appears during the first year of the animal's life, and when it is about or under six months old; it is far less frequent during the second year, and, after that, the sheep seem to have acquired an immunity against the attack of the hydatid. The symptoms are as follow:—the sheep cease to gambol with their companions; they are dull; they scarcely graze; they ruminate in the most languid and listless manner; they separate themselves from the rest of the flock; they walk in a peculiar, staggering, vacillating manner; they lose themselves; or, seeking out some ditch or brook, they stand poring over the ruffled or flowing water. They stand there until they appear to be overcome with vertigo, and often tumble in. In the midst of their grazing they suddenly stop, look around frightened, and start away and gallop over the field. They begin to lose flesh, and the countenance is haggard, and the eye wandering, and of a curious blueish colour. The last circumstance, although not observed so carefully as it ought to be, is perfectly characteristic of the disease, and a clever shepherd would select every sturdied sheep from the flock by the colour of the eyes.

Decided Affection of the Brain.—This evident cerebral affection increases. The animals begin to carry the head on one side, and always on the same side. It is with difficulty that they can straighten the neck in order to graze, and then there is a peculiar undecided motion in the act of grazing. Their fits of wandering become more frequent; they are oftener frightened without apparent cause; they take increasing pleasure in poring over the rippling brook; there is something in the playing of the light on the water, or in the murmuring sound, which has a lulling influence over them, and they often forget themselves and topple in and are drowned.

Peculiar Rotatory Motion.—By-and-by they commence, and even while grazing, a rotatory motion, and always in one way, and with the head turned on the same side. Then they almost cease to eat or to ruminate, partly because the disease, from its debilitating character, destroys the appetite altogether, and more perhaps because they are rapidly becoming blind. They

begin to be inattentive to surrounding objects, and move among them as if they were unconscious of their existence. The habit of turning round increases; they will continue to form these concentric circles for hours together without stopping, or until they fall, and they will rise again only to commence the same round: at length they die emaciated or exhausted; or death is somewhat hastened by their being unable to extricate themselves from the brook or the ditch.

Proceeding from an Hydatid.—On examining them after death, we find an hydatid, a true hydatid, or many of them, between the pia mater and the brain, and sometimes embedded in the cerebral substance. The existence of these hydatids has been doubted in the human brain. After enumerating various names on the one side and the other of the question, Dr. Copland, in the article on the BRAIN, in his excellent "Dictionary of Practical Medicine," says, that 'whether these bodies were entozoa, or mere hygromalous tumours or cysts, rests upon the pathological reputation of the physicians.'

Description of the Hydatid.—There is, however, no doubt about the matter here: they are hydatids of the *cysticercus tenuicollis* species (the hydra hydratula of Linnæus). When they are perfectly dissected out, the neck is readily perceived, and also the tentacula, or barbs, projecting from the apparent opening or mouth, which forms the extremity of it. They vary in size from a marble to a pigeon's egg. A cyst or bladder presents itself, containing a fluid, sometimes a little turbid, and at other times as pellucid as water, but with a slight animal taste and smell. There is no further organization about them than that they appear to have a double or treble investment, the central layer of which would seem to be of a muscular character. Sir Everard Home says, that, after having submitted them to examination with microscopical glasses of a high magnifying power, "their coats resembled paper made upon a wire frame, that is to say, the muscular fibres interlaced each other in a way that would satisfactorily account for their vibratory motion." The parasite, when first extracted and placed in warm water, has an evident vibratory motion; and if then punctured, the contained fluid will be ejected to a considerable distance. The inner membrane is clearly marked with rugæ, like the stomachs of animals of a different class.

Mode of Production.—Their mode of production is altogether unknown. The ovum or germ, or minute hydatid, may be floating in the atmosphere, or be received with the food, and, like some other entozoa, and more particularly like the filaria in the eye of the horse and the ox, may thread the various bloodvessels and capillaries until it arrives at its destined nidus, the brain of a

weakly sheep; or, under certain conditions of the brain, are these entozoa produced spontaneously? and if so, what are the laws and the conditions of their production? Has a state of debility any influence on the production of these parasites? or why should their appearance be confined to the very youth of the animal? Of these things I know nothing—they are mysteries which I am unable to penetrate; but the mode of reproduction in the hydatid I know, and it is singular enough. Smaller hydatids are found floating in the belly, if we may so term it, of the larger ones. Many dozens of them have occasionally escaped when the parent has been wounded, and on the rugous surface of the envelope of the hydatid, and particularly towards the neck of it, there are numerous minute granules or vesicles, which are probably the germ of future hydatids, while on the outer coat of the hydatid there are certain irregularities, little points or granulated projections, by means of which the hydatid seems to be united to the cerebral substance.

Progress of the Disease.—These parasitical animals are probably exceedingly small when first deposited in the brain; and whether their growth is slow or rapid, they at first produce little disturbance there—no altered function will tell of their presence: but when they have attained a considerable bulk, and press upon the neighbouring vessels, or the origins of the cerebral nerves, their presence cannot be mistaken.

If the head should sometimes be held on one side and sometimes on the other, it indicates that there is an hydatid in each lobe of the brain. In a very few cases the sheep will march straight forward, with his head depressed, running against everything in his way, and continually falling: the hydatid will then be found to be attached to the corpus callosum, and to occupy the middle scissure of the brain. In a few cases the muzzle will be elevated, and the head thrown back, and still the sheep will pursue his straightforward course; the hydatid will then be found on the cerebellum, or occupying the fourth ventricle.

Very prevalent.—This is a sadly prevalent and fatal disease in some wet and moorish districts, and in cold and backward springs. It is particularly fatal in the greater part of France. It is supposed that at least 900,000 sheep annually die there of the *tournis* (so the malady is called in France). We give it many strange, yet not altogether unmeaning names, the gig, goggles, turnsick, sturdy.

Strange Opinions of its Cause.—Old writers attributed it to various other causes; as, the poisonous effect of certain plants, or the consequence of exposure to hoar frost. Some have considered it to be a species of serous apoplexy; others the result of the

accumulation of fluids in the ventricles of the brain; and others have traced it to violent blows on the head, either inflicted by the brutality of the shepherds, or in the playful or serious contests of the animals with each other. Among modern writers, Mr. Price considers it to arise from local weakness of the membranes of the brain, and thus from the constant inclination of the head when feeding, distention of the membranes is the consequence: Mr. Hogg, forgetting the anatomy of the brain and spinal chord, believes that it is an excess of fluid injected into the brain from the central canal of the spinal column; and another writer, adopting a similar opinion, has affirmed that it results from the lambs not being docked at a sufficiently early period, for "sometimes the ewe, in the ardour of her maternal affection, chews away the tail from her newly-fallen lamb, and none of these are afterwards affected by the sturdy; whereas where lambs have been docked late, a quantity of water has been found lodged at the root of the tail, which may sometimes increase, and proceed along the spinal marrow, until it makes its final lodgment in the brain." Unfortunately for these gentlemen, there is no communication between the centre of the spinal chord and the brain.

Not hereditary.—Is there no cure for it? Mr. Parkinson thinks he has discovered one, but I much doubt whether you would practise it. He prefaces his account by a remark that is both consolatory and true. "I have cured a great number of sheep, some of which have afterwards bred many lambs, and I never knew an instance of the offspring being so affected. I do not believe that it is an hereditary disease. It depends upon the season and state of the sheep at the time; and, the strength of the constitution being restored, there is no reason to fear that the malady will be communicated to the offspring."

Cure by Rupture of the Cyst.—Mr. Parkinson tells us, that his father's remedy was to cut off the ears, rather by way of bleeding than with any other intention; and a sheep now and then, perhaps one in twenty, was thus cured. "It happened one day," says he, "when I was with my father's shepherd, I observed one of the half-year-olds, although not entirely leaving the flock, yet having the appearance of being affected with the disorder. The shepherd was an extraordinary good runner; but this sheep gave him a severe chase, and he was some time in catching it, which put him in a passion; and happening to take it by the ears, he twirled it round several times before I got to him. I then cut off its ears, as near to the head as I could with safety; it being our usual practice to cut them off pretty close; but by swinging it round the shepherd had probably pulled the

ears out of the socket, for the result was, that in about two days the sheep had rejoined the flock. Since that occurrence I have made it a rule constantly to pull the ears very hard for some time before I cut them off; and this proceeding has seldom failed of effecting a cure." This is far too brutal and barbarous for you and me; although I can easily imagine, that in the dreadful struggle which must ensue in wringing the ears so "very hard," and then cutting them off, the cyst will probably be ruptured, and the hydatid destroyed; but the sheep would stand no little chance of being permanently injured, and I would rather send it to the butcher at once.

Others effect the same object in as brutal a way. They set the dog on the poor sheep, to hunt and worry it without mercy; and the chase is so contrived, that, if possible, the sheep shall tumble down some stone-pit or considerable declivity, and in the shock of the fall the hydatid is burst, and now and then the neck of the sheep is broken too.

Two cases are gravely related in confirmation of this practice; that a sturdied sheep was frightened by a pack of hounds that came into the field in which it was grazing, and that it immediately leaped over a high hedge, and was afterwards well; and another sheep was standing on the edge of a precipice, and fell down and broke the hydatid, as was supposed, and was ever afterwards free from the disease.

Other Remedies.—Neither Mr. Lawrence's warm-bath, nor the mercurial friction, nor the repeated doses of physic recommended by others, although having a more surgical appearance, could have any effect on a disease like this.

Perforation through the Nose.—Mr. James Hogg, the Ettrick shepherd, used to practise a very ingenious operation. He shall speak for himself:—"When I was a youth, I was engaged for many years in herding a large parcel of lambs, whose bleating brought the whole sturdies of the neighbourhood to them, with which I was everlastingly plagued; but, as I was frequently weaving stockings, I fell upon the following plan: I catched every sturdied sheep that I could lay my hands on, and probed them up through the brain and nostrils with one of my wires; when I beheld, with no small degree of pleasure, that by this simple operation alone I cured many a sheep to different owners; all which projects I kept to myself, having no authority to try my skill on any of them; and it was several years before I failed in any one instance." This is saying a great deal for the operation, which he describes more particularly in another place. "The operator must feel for the part of the skull that is soft, and lay his thumb flat and firm upon that; then, taking the wire in

his right hand, he must push it up the nostril that points most directly for the place that is soft, where the disease is seated; and if he feels the point of the wire below his thumb, he may rest assured that the bag is perforated; and that, if the brain does not inflame, the creature will grow better. The bladder being thus pierced on the lower side, the liquid continues to drip through the hole as long as any remains, and even as fast as it gathers, so that the perforation does not get leave to grow up or close again until the animal is quite better."

Danger of this Operation.—I have, however, considerable objection to this operation, which has had a fair trial in various parts of the kingdom, and in Scotland particularly; and although it is still practised by some, is far from being so successful as it was in the hands of Mr. Hogg. Considerable mischief is done in the passage up the nose; for the sense of smell in the sheep being very acute, the turbinated and æthmoidal bones are greatly developed, and fill the nostril almost to choking, in order to give greater surface for the pulpy ramifications of the olfactory nerve to be spread upon. Both of the turbinated bones, and the nasal portion of the æthmoid bone, must be perforated. The style must next pass through the cribriform plate of the æthmoid bone; and, from the sudden depression of the parietal bone, and the dip of the cranium downward, the situation of this plate is somewhat changed, and does not present itself, as in the horse or the ox, at the termination of the nasal cavity, and therefore it is not a little difficult to hit. Although I have performed the operation many times on the dead subject, and more than once on the living one, this perforation of the cribriform plate was not so easy a matter with me as it seems to have been with Mr. Hogg.

The Danger of Wiring.—Then, although from this downward direction of the cranium there is little danger of wounding the base of the brain, or the origin of any of the nerves, yet I can see a great deal of danger in the perforation of the medullary substance. It is true that the animal feels it not at the time; but the brain is too lavishly supplied with bloodvessels not to render the almost immediate accession of inflammation a matter of apprehension. Mr. Hogg candidly owns that such as die in consequence of wiring are "in the greatest agonies, and often groan most piteously." On dissection the brain appears inflamed, and the course of the wire is easily traced: it appears as if a common wheel spindle had passed through it. He also acknowledges that, in a few instances, he has seen the sheep fall down like a creature felled, and expire in the space of two minutes. In addition to all this, there are sometimes two or three of these hydatids in the same brain, and differently situated, so that the

wire cannot possibly reach them all. I am afraid that this celebrated operation, and which the name of the Ettrick shepherd for a while rendered popular, must be suffered to sink into comparative disuse and distrust.

The Situation of the Hydatid discovered.—The effect of pressure is not always sufficiently understood in veterinary or human practice. By the constant but slight pressure of this bladder, not only is a sufficient portion of the brain absorbed to make room for the growth of the hydatid, but even the bony substance of the roof of the cranium disappears; and therefore, in process of time a soft yielding spot, somewhat variable in its situation, but generally a little anterior to the root of the horn, and more towards the centre of the skull, marks the residence of the hydatid.

In this way alone is the precise residence of the hydatid detected; and I must beg leave respectfully to demur to the account of this matter given by a very excellent writer, Dr. Kerr, in the "Cyclopedia of Practical Medicine," that "their precise situation in this (the cranial) cavity has been frequently discovered by the effects produced on particular nerves, and the action of those parts under their influence; indications which have sometimes led to their extraction, to the perfect relief of the suffering animals." Anatomically speaking, I am at a loss to conceive how they can, by possibility, influence the function of any of the *cerebral* nerves, so as to guide me to their "precise situation," or how I should be able to reach them there. No partial (and it would only be a partial) impairment of smelling, vision, or hearing, or of the motion of the muscles of the eye, could be recognised by me: but it is only by the uncertainty of gait and the growing stupidity, that I can recognise the injurious action of some foreign body on the sensitive and the motor columns generally, or the prolongation of them within the cranial cavity. It is a sense of uneasiness or pain, or a feeling of weight, that inclines the animal to relieve himself by leaning the head on one side, and thus pointing out to us the lobe in which the parasite is lodged. The circular motion, naturally tending to that side from this inclination of the head, confirms this indication: but it is the softening of the skull which alone enables us to determine in what part of the lobe we are to seek for the author of the mischief. And now another kind of operation can be performed, to get rid of this little but formidable being.

The Operation of extracting the Hydatid.—A crucial incision should be made over the spot. If a portion of bone remains, it should be removed by the trephine; or if the bone is quite gone,

a second incision should be made with the knife through the pericranium and the membranes of the brain. It will be a matter of some importance, and more interest, to extract the hydatid whole; but that will not often be practicable. Every portion of it, however, must be carefully removed: the head of the sheep must be so held that all the fluid may escape; and then the membranes and the integument must be restored to their situation, and a soft pledget, or, what is better, an adhesive plaster, must be put over the whole.

The Appearance of the Cranial Cavity.—Mr. Stephens, at one of the meetings of the London Medical Society in 1831, gave the following account of an operation on a sturdied sheep. He took out a portion of bone with the trephine; and, on cutting through the dura mater, a very large hydatid partially protruded. This he attempted to extract, but the cyst broke. He afterwards extracted the cyst; and, on looking through the opening made with the trephine, he found the interior to present a large empty cavity, and the brain appeared completely gone. He then let down a light into the opening—into the very cavity of the skull—by which it appeared that nearly the whole of the cerebrum was wanting. The opening being afterwards closed, the sheep got up and fed, and seemed better for the three following days; but on the morning of the fourth day he found it convulsed, and in that state it soon died.

External Puncture.—Some, afraid of the large opening into the cranium caused by the trephine, have contented themselves with puncturing the cyst at the spot at which the skull is softened. A common awl is used for this purpose. The fluid usually spirts out violently at first; but there is no certainty of its being all discharged, or of the hydatid being destroyed by this simple puncture. I do not see that anything is gained by this mode of going to work, for there is no danger in the mere operation with the trephine; the danger arises from causes common to both—the new cavity formed, and the admission of atmospheric air; while there is the advantage attending the trephine of destroying the cyst, and perhaps detecting others in contact with it.

Cautery.—Some have recommended a heated iron as the instrument for effecting the perforation; but this is a relic of farriers' barbarity, and is objectionable from its tendency to produce or to increase that inflammation which is too apt to arise however we operate.

Injections.—When the hydatid has not been completely removed, it has been proposed to inject certain fluids into the cavity to ensure the destruction of the animalcule. Tincture of

myrrh has been used. An injection, composed of unknown ingredients, was sold at a great price in France; but it was soon found that inflammation was the almost inevitable result of this practice, and that death speedily succeeded.

Comparison between the Operations.—The operation by the trephine has usually been an unsuccessful one, and more so on the continent than in our country. It has been imagined, that two out of five may, at the most, have been saved by this operation, conducted by a skilful practitioner. But he had much to contend with: the enormous vacuum in the cranium suddenly formed by the removal of the hydatid, and the cerebral disturbance which must be the necessary result of this;—the rush of blood which would follow when the vessels, relieved from the compression of the brain, were rapidly dilated;—the admission of the atmospheric air into such a cavity, and the irritation it must inevitably occasion;—the previous impairment of nervous power, both animal and organic, by the destruction of so great a portion of the cerebral substance, and the almost total suspension of the most important of the nervous functions. There is something, then, quite as formidable in the concomitants of the operation with the trephine as in that of the wire as practised by Mr. Hogg; and there might be thought to be this advantage on the side of the latter, that the fluid is more slowly evacuated—drop by drop—and that the surrounding parts have a somewhat better chance of adapting themselves to the change, while there is not so free an opening for the atmospheric air.

Both deferred too late.—The efficacy of both operations is probably diminished, and that to a very material degree, by their being employed at too advanced a period of the disease. When the skull begins to soften, sad ravages must have been committed in the cranial cavity. Before the solid roof will yield, a considerable portion of the brain must have disappeared, and the chance of saving the animal will have very materially diminished. It is not necessary to wait so long in order to ascertain the existence of the hydatid, for the separation of the sheep from its fellows, its peculiar gait and manner, and the evident impairment of intellect, will plainly mark him out as a sturdy; and then, if he is carefully watched, it will soon be seen on which side his head seems to incline; and on that side the hydatid is lodged. It probably will not then have attained any great size. Either operation may then be resorted to with far better probability of success. I should prefer the trephine—comparatively little danger attends the application of it, if the brain is not previously too much disorganized; and the examination of the heads of several sturdies tells me, that the residence of the hydatid is

generally in one particular spot, a little more than an inch anterior to the root of the horn, and in a direction towards the frontal suture. If I am disappointed in finding the parasite there, I can afterwards have recourse to the wire, on the supposition that the hydatid may be embedded in the substance of the brain. Under these circumstances, the trephine would succeed much oftener than it does now.

The permanent Result of the Operation.—But there is still another question to be taken into consideration. Supposing that we have effected a seeming cure, can we depend upon the permanent result of the operation? It is mortifying to be compelled to answer this in the negative. It is exceedingly annoying to the experienced practitioner to be constrained to regard his most successful cases with suspicion. The farmer acts properly here—experience has taught him wisdom. He fattens the sheep as speedily as he can, and sells him; for in too great a proportion of cases, three months will scarcely pass before the disease will return, and a second operation will become necessary; and even that may not be effectual. No sooner has one hydatid been removed than another begins to develop itself. Huzard jun. counted no fewer than thirty distinct hydatids in the brain of a lamb; and therefore we may sometimes operate without end, and the animal must at length inevitably perish. Even after the expiration of six or nine months he is not safe.

Difference between the Symptoms of Sturdy and other cerebral Diseases.—The presence of the hydatid can scarcely be confounded with inflammation of the brain, when we regard the anxious yet half-vacant countenance—the absence of furious delirium, and of all desire to do mischief. If the sheep seems to be galloping wildly about, it is evidently to avoid some imaginary evil, and not to seek an encounter with an imaginary foe. From rabies it will also be distinguished by nearly the same symptoms; but more of the distinguishing symptoms between the sturdy and frenzy and rabies hereafter.

With apoplexy and inflammatory fever it can scarcely be confounded, for these generally attack the flower of the flock: the comparatively debilitated sheep is the prey of the hydatid. The victim of the former can scarcely be induced to move, the latter is scampering everywhere without rhyme or reason. The progress of apoplexy and inflammatory fever is rapid—a few hours decide the fate of the patient; the progress of this is slow: the one dies of plethora, the other of marasmus.

Medical Treatment.—Are, then, our efforts confined to the one or the other of these operations, and the tedious waiting for the time when we may have recourse to them, and the doubtful re-

sult to be expected from them? nearly or quite so: but then the farmer may do something, he may do much more than he imagines, *in the way of prevention*. He should take much better care of his lambs in the winter. I have known a few cold nights have an effect in the flock that could not be completely got rid of for many weeks. Rheumatism, and coryza, and scouring, and ultimately the hydatid, severely and justly punish the farmer for his neglect and cruelty to his young charge in the winter. I am no advocate for that system of nursing which would render the flock unable to endure the sudden changes of our variable climate; but there is a recklessness about our farmers with regard to their ewes and lambs at yeaning-time which cannot be too sternly reprobated, and for which they justly suffer. The winter and early months of spring being passed, the disease almost disappears.

M. Giron de Buzaseinques, in a paper on this disease, read before the Royal and Central Societies of Agriculture in 1824, thus expresses himself:—"I have put into practice my mode of prevention: I have fed my flock better and given them more exercise. I have driven them on the mountains of Aveyron, where the salubrity of the air and the diversity of the herbage invite them to stray about to cull the sweetest food. I have spread salt about, and by such regimen I have strengthened my sheep, and the consequence has been, that I have had less staggers among them; the malady is on its gradual decline, and I reckon by perseverance to get completely rid of it."

Supposed Prevention.—Some proprietors of sheep have endeavoured to protect the cranial cavity from the debilitating influence of cold and wet, by leaving the head covered with the wool until the lambs were eighteen months old, but the hydatid was as mischievous among the flock as before. A decoction of madder root has been given to whole flocks without beneficial result. Some persons have bled every sheep in the flock when the sturdy began to appear, but its ravages were not staid. Others severely blistered the whole of the roof of the skull, and with the same want of success. A German writer believed that the unknown parent of the hydatid pierced the skull on some part of the forehead and deposited its eggs, and therefore he covered the whole of the skull with a glutinous impervious substance, composed principally of the white of eggs: not a sheep the less was attacked, although the seat of the disease was protected by this impenetrable covering.

Nairac's Preventive Treatment.—The most recent preventive and curative, was that promulgated by Nairac, and of which Hurtrel D'Arboval gives a long account in his valuable essay on *Le*

Tournis. It consists in the application of the actual cautery to the skull. A kind of branding iron was made, to one end of which an N was fancifully affixed. The wool was cut off from the forehead, and the iron being heated so that resting on a card for two seconds it would carbonize but not perforate it, it was placed somewhat lightly on the forehead of the lamb. After resting there two seconds it was lifted up, and immediately replaced with a greater pressure for three seconds; it was once more moved, and again pressed yet more firmly on the skull for five seconds. All the lambs of four and five months old underwent this severe cauterization, and which was effected before the summer came on, or the flies could be likely to deposit their eggs in the wound. The place selected for the cauterization was over the frontal sinuses and between the eyes. This was the preventive treatment, and according to Nairac it was infallible. He operated on many thousands of lambs belonging to himself and others, and did not lose one. He continued his experiments during fifteen years without a single failure. This was even more satisfactory than the knitting-needle of the Ettrick shepherd. It was, however, nothing more than a severe branding of the lamb on the forehead with the magical ceremony of removing the iron so many times, and replacing it with regularly increasing pressure, and a cabalistic increasing number of seconds.

It fails when put to the test.—Some persons, however, began to doubt whether this branding on the forehead, severe as it was, could destroy the diminutive hydatid that might have existence, but was yet incapable of doing mischief; and still more did they doubt whether the permanent effect which Nairac described could possibly be procured, and they determined to put its boasted preventive power to the test. Hurtrel D'Arboval entered the field among the rest, and he was enabled to experiment on a somewhat large scale. He had a flock of 174 Merino lambs, and none of them a twelvemonth old; he applied the cautery to ninety-three of them, and he left the remaining eighty-one to take their chance. Out of the ninety-three no fewer than eight became sturdied and died, and only four of the eighty-one were affected. Hurtrel D'Arboval, with his usual candour, acknowledges that he would not be justified in concluding from this single experiment, that the cauterization predisposed the animal to the production and growth of the hydatid; but he was fully warranted in concluding that the cauterization had no preventive effect at all.

Another empiric now appeared in the field.—The branding-iron was again used in the same manner, but applied immediately over the situation occupied by the hydatid, and on two or three

other places on the cranium, so as to produce considerable sloughing and discharge. This was soon put to the test, and the immediate result was as satisfactory as could be desired. Four sheep were cauterized and seemed to be perfectly cured, and they continued apparently well during four months, when the disease returned, and they died. This mode of treatment, therefore, rapidly lost the reputation which it had acquired, and fell into comparative disuse.

I have dwelt thus long on this disease, because it is a sadly fatal one, and you should be acquainted with everything that has been done or can be done respecting it; and as often as you have opportunity, I trust that you will enter on a course of experiments that may by possibility lead you to some successful result: but in the present state of our knowledge and practice, I am afraid that, regarding the interest of your employers, you should advise them when the turnsick begins to appear among the lambs, to fatten them as quickly as they can, and to slaughter those that may become affected the moment the disease is ascertained. This is a most lame and impotent conclusion. I am sorry for it; but truth must be our guide.

ON OPENED JOINTS.

By Mr. KERR.

To the Editors of "The Veterinarian."

Gentlemen,—SHOULD the following plan for the treatment of opened joints—more especially of the knee—which, as far as I am aware, has never been recommended by any veterinary writer—be deemed worth publishing in your periodical, I shall feel gratified by its insertion. *The success of the plan, combined with its simplicity* in lacerations of so serious a nature, I think and hope will entitle it to a nook.

Of course, the first thing to be done, after the patient is placed in the stall or box that he is intended to occupy without being disturbed, is to cleanse the wound; and ragged portions of integument, &c. may be at once removed (it is a quicker, and I think better treatment than waiting for the sloughing process—at least I always do it, and am well satisfied); *then place a splint* behind the knee, *secure it well high up above*, and six inches, at least, below the joint. *Use no external covering*, BUT EXPOSE *the wound* TO THE AIR. In a short time the synovia will coagulate. *Let it alone. On no account disturb the* CLOT, *except it should by its increase become so heavy as to endanger its tearing*

off. Then once or twice a day, according to circumstances, lighten its weight with a sharp pair of scissors. These, then, form the three principal features of my plan—*the splint, no covering, and allowing the clot to remain.*

Bleeding, both local and constitutional, alterative medicine, slinging, low diet, &c. are agents to be used as circumstances may require.

One thing, however, I have always employed, viz. a solution of chloride of lime with water, about one part of the chloride to four, five, or six of water. With this lotion the wound should be bathed four or five times a day. It answers three good purposes—it keeps down granulations; is a powerful corrector of unhealthy tendencies; and, for aught I know, assists in coagulating the synovia.

Veterinary Dispensary, 33½, Guildford Street,
Russell Square, Sep. 12, 1834.

RUPTURE OF THE STOMACH.

By Mr. FIRMAN FULLER, *V. S., March, Cambridgeshire.*

Aug. 2d, 1834.—A CHESTNUT mare, six years old, the property of the Rev. A. Peyton, of Doddington rectory, had returned from London a few days previous, where she had an attack of influenza. The groom informed me that he had bled her and given her some fever medicine during her journey, in consequence of her having inflammatory symptoms. The following were the symptoms when I first saw her:—Pulse 60; hurried respiration; mouth particularly hot and dry; conjunctiva and schneiderian membranes highly inflamed; great tenderness about the pharynx and larynx, which occasioned difficulty of swallowing; the fæces indurated and slimy.

I abstracted 8℔s. of blood; after which I gave her aloes ʒiii, with a little fever medicine, and stimulated the throat and the course of the trachea with the infusion of cantharides. I also ordered mash diet and gruel, and that she should be placed in a loose box.

3*d*, A. M.—Pulse 45; febrile symptoms mitigated; the dressing to the throat acted effectually. There is now swelling of the extremities, particularly about the hocks and knees; the fæces much the same. I gave her aloes ʒiss, ant. tart., digitalis, et nit. pot. āā ʒi, in a ball; and repeated the medicine at night, omitting the aloes. I threw up a gallon of gruel as an enema. Mashes and gruel as before.

4th. A.M.—Pulse 30, with intermission; swelling of the extremities increased; bowels rather relaxed; fæces of a pale colour and slimy; no appetite; a mucous discharge from the nostrils; Schneiderian membrane of a pale violet hue; conjunctiva and membrane of the mouth of a yellow tinge. I gave the following ball three times a-day: pulv. gent. ʒii; digitalis, ant. tart. et nit. pot. āā ʒi. She refusing all kinds of food, I ordered good gruel to be horned down frequently, and the extremities to be well hand-rubbed. Diet as before.

5th.—Symptoms much the same as yesterday. As she continued to refuse her diet in the stable, I ordered her to be turned into a paddock a few hours during the day, with the medicine and gruel continued.

6th.—Swelling of the extremities less; pulse still irregular; bowels rather constipated; respiration more hurried: I gave aloes ʒiii, fever medicine and gruel as before. She has eaten but little grass; her general appearance very dull; and she has fallen away much in flesh.

7th.—Fæces of a better consistence, but of a pale colour; pulse 45, but still irregular: appeared more lively, has eaten more of the grass, and, all circumstances considered, better.

8th.—She appeared to be gradually mending, with the medicine and gruel continued; occasionally taking a mash with a few oats until the 20th P.M., when the following symptoms appeared:—Pulse 50, very irregular, with long intermissions; hurried respiration; haggard countenance; great disinclination to move; fæces buttony; a craving after every rubbish in preference to natural food, such as dirty litter, and other similar things highly improper and unnatural. I entertained very slight hope of her recovery, but administered the following medicine, aloes ʒiij, gentian, nit. pot. of each ʒij, in a ball. v. s. lb. vi. The enema and gruel as before.

21st, A.M.—Pulse still irregular; disinclination for food; respiration something better; countenance more lively; but she is still reluctant to move: inclined principally to eat sour grass; fæces rather softer, but buttony. I gave her aloes ʒiss, digitalis et ant. tart. āā ʒj, and gruel continued.

Very little alteration occurred until the 27th P.M., when I discovered her labouring under great excitement, evidently from a sudden change which had taken place in some of the abdominal viscera, as she would frequently give signs of great agony by looking towards her flanks. Her pulse was very much oppressed; no visible alteration in the membranes of the eye and nostrils; hurried respiration, and extremities cold; the rectum was particularly hot and dry, but no fæces. I ordered her to have ol.

ricini ʒxij, tinc. opii ʒj, v. s. lb. vi; and I administered gruel as an enema. At 12 P.M. she died.

Post-mortem examination.—Upon opening the abdomen the intestines presented no particular inflammatory appearance, except about the duodenum; but the abdomen contained four or five gallons of fluid mixed with a greenish matter which seemed to have escaped from some of the viscera: after removing the intestines, the cause of her sudden death was readily discovered. Her stomach was unusually large, and enormously distended with grass; the peritoneal coat at the great curvature was ruptured to the extent of about eighteen inches; the muscular and mucous coats had also given way to the extent of about three inches. A corresponding opening was visible in the omentum; a great quantity of the contents of the stomach had escaped, and lodged themselves between it and the omentum. After removing the contents of the stomach, the mucous coats presented strong inflammatory appearances; the cuticular coat appeared very thin and relaxed, but there were no bots adhering to it.

The liver was extensively diseased—it was not more than half its usual size, and of a pale colour; the peritoneal coat was raised in many places, presenting an emphysematous appearance. All the thoracic viscera were perfectly healthy.

ON SPAVIN.

By Mr. J. P. CHEETHAM, *V.S., Edinburgh.*

I HAVE been induced, by your kind reception of my paper on Splints, to send you the following essay on spavin. It will be observed that the reasoning I am about to bring forward somewhat resembles that which I adopted when speaking of splint. The hock of the horse is one of the most important joints in the animal machine, and, if it is not examined in a very careful way in the purchase of horses, this disease will not be unlikely to ensue after severe work.

Anatomy and physiology being the best foundation of veterinary knowledge, I will first appeal to them, by examining the structure and function of the tarsus, metatarsus, and tibia. The tibia articulates with the astragalus by a hinge joint; but the essential point we have to consider is the manner in which the superincumbent weight is conveyed to it. When the leg is in a semi-flexed position, this articulation inclines inwards; and in

this state the foot comes in contact with the ground, in order that the animal may propel himself onwards, and in doing which the tarsus is forced inwards. To contend with this, we have ligaments sufficient in a well-formed limb to sustain the weight. The first I shall name are the lateral ligaments on the inside of the hock; they are four in number, each of them taking its own peculiar direction, while on the outside there are only two.

The first ligament we meet with on the internal part arises from the tibia; a portion of it is inserted into the lower part of the astragalus, and the remainder passes in a fan-like form over the inner part of the cuneiform bones, and attaches itself to the head of the metatarsus. I believe that it is owing to this ligament that horses affected with spavin flex the leg so quickly, because it is then thrown out of action; while, on the contrary, it is in use in the extended position. Besides the aforementioned ligament connected with spavin, there are underneath it, and expanding in front of the articulation, ligaments joining the cuneiform bones, astragalus and metatarsal bones together, and in which the disease named *bone spavin* seems to exist. Why this should be most frequently found on the superior and inner part of the metatarsal and cuneiform bones evidently depends upon the action of these bones, and on their being thrown inwards, as both anatomy and physiology clearly dictate.

Certain forms of hocks favour this kind of action, and therefore are more liable to bone spavin than others are. I need not here bring forward each description of hock that is subject to this disease, because I am fully aware that I could not, in a written essay, satisfactorily explain the forms and connexions of these bones.

The hocks most subject to spavin are those that approach each other, called *cow hocks*. Next are those that are narrow at the inferior part of the tarsus, and which are named *curly hocks*, and of this kind those where the os calcis inclines backwards.

The first stage of spavin is inflammation of the ligament that unites the small bones together; and this is succeeded by partial ossification of the ligament, and is frequently accompanied by exostosis. At this period we have generally lameness, and particularly if there is any motion remaining among the bones. If the inflammation continues for any considerable time, there may be ulceration of the articular cartilage, and the lameness will be severe.

This ulceration is invariably at the anterior part of the articulation formed between the astragalus and cuneiforme magnum, and also in the two inferior bones; the weight being more directed to these parts in the act of progression.

In cases of this character, the only probability of a cure is the union of these bones, by which means all movement is stopped between their ulcerated and sensitive surfaces.

Connected with spavin is friction of the astragalus and the inferior extremity of the tibia. The cause of this I imagine, in many cases, to proceed from the want of motion betwixt the different bones of the tarsus, and that in a direction inward. What would warrant me in drawing this conclusion is, that the injury done to the articular cartilage in the commencement of the disease is on the outer sides of each of the ridges of the astragalus, and likewise on the tibia that opposes these parts.

The effects of this vary in many of our specimens. In some there is a polished surface similar to the appearance of enamel, which is generally found midway in the circle of the condyles. In others the surfaces are grooved all over the articulation. When this has taken place, there is no treatment adequate to restore the articular surfaces to their original smooth and elastic condition.

Connected with diseases of this articulation is an increased quantity of synovia, producing those enlargements called bog spavin and thoroughpins.

From the brief description I have given of spavins, it cannot but be acknowledged that no one empirical kind of treatment can ever cure the different varieties which I have described; yet many have laid down a mode of proceeding which they think is a specific, while they will not admit that benefit can be derived from any other plan. The grand principle in treating most parts or organs in disease is to keep them at rest, and it will be found that this alone often effects more than any of our contrivances or applications; but when it can be of service it must not be lost sight of, that the translation of inflammation is one of our first and foremost means; and in these cases this can be effected only by stimulants, and the most powerful we at present possess are the actual cautery and the blister.

I have yet to learn as to the efficaciousness of setons in spavins. I have in recollection one case in which they were inserted, and persevered in for two months without the least benefit: firing was then had recourse to, and effected a cure.

When the ligaments are first injured, I have seen the lameness and swelling removed by depleting remedies; but at this period of the existence of spavin the veterinarian seldom sees the horse, on account of the trifling degree of lameness.

THE ROT (LA CACHEXIE AQUEUSE) IN SHEEP,

AS OBSERVED IN EGYPT BY MM. HAMONT, FOUNDER AND DIRECTOR OF THE VETERINARY SCHOOL OF ABOU-ZABEL, AND S. FISCHER, PROFESSOR OF ANATOMY AND PHYSIOLOGY AT THE SAME SCHOOL.

[We translate this essay of Messrs. Hamont and Fischer, transmitted to the valued instructor and friend of the former of them, M. Dupuy, not because it gives a view of the proximate cause of the Rot in Sheep which we are disposed to adopt, but because it illustrates some of the principal points of pathology which divide both the French medical and veterinary schools; it pourtrays to the life the manner in which the principles of medicine are unfolded by the continental professors, and in which also their disputes are conducted, where calm and legitimate reasoning, and gentlemanly feelings and conduct, are not quite forgotten.

The graphic description of the rot in Egypt—its habitation—its periodical appearance and retreat—the circumstances with which it is connected—its symptoms during life, and the traces which it leaves behind it, are invaluable. The pathologist and the practical man will draw many an important and useful conclusion from them.] Y.

HAMONT AND FISCHER ON THE ROT.

La Cachexie Aqueuse, or the rot, known in Egypt by the name of *Dyssa*, is a disease of frequent occurrence in France, England, Germany, the low countries of Italy, and in Egypt, after the inundations. It is observed in Egypt in the sheep, the rabbit, the hare, poultry, and sometimes in the horse, the mule, the ox, the dog, and the silkworm. It is always dangerous; generally epizootic or enzootic; and characterized by œdema, at first partial, and afterwards general; infiltration of the visible mucous membranes, tumours under the jaw, diminution of temperature, dejection, a staggering gait, swelling of the whole body, and diarrhœa. It is considered by some to be an essential disease; others regard it as merely symptomatic.

It assumes its most serious character after heavy rains and extensive floods, and in wet countries covered with aquatic plants. It affects animals of different ages, and in all seasons.

It appears every year in Egypt after the fall of the Nile, and it follows and keeps pace with the subsidence of the waters. In the superior parts of Upper Egypt it commences about the

end of July; nearer Cairo in August; in the environs of the capital in October and November; and during the months of December, January, and February, in the Delta. It is most obstinate, and continues longest, in the neighbourhood of the confluence of the waters: in Lower Egypt it lasts about 120 or 130 days, and it disappears soonest, and is least fatal, when the rise of the Nile has not been considerable.

Desolation and death accompany it wherever it passes. The Arabs say that this pest annually destroys sixteen thousand sheep in Egypt. Its victims usually perish on the twenty-fifth, thirtieth, thirty-fifth, or fortieth day after the apparent attack. The symptoms which characterize it are the same in Egypt as in Europe. If an Arab shepherd is asked how he distinguishes this disease from all others, he replies that "they have under the jaw a bag full of water; that they walk with difficulty; have diarrhœa; their wool falls off; they are dull, disinclined to move, and are almost constantly lying down; sometimes a fœtid matter of a variable colour, yellow, grey, or green, runs from the nose. The head and neck, and belly and limbs, swell; the eyes are red; they become thin; they eat and drink little when the disease is in an advanced state, but rumination continues for a considerable period."

Chabert, in his excellent work, has described the symptoms of rot with much precision; all that has been remarked by that accurate observer we have seen on the banks of the Nile.

Hurtrel d'Arboval, in describing the symptoms of the rot, speaks of a frequent and wiry pulse, and vesicles on the tongue. We have had the opportunity of observing a great number of sheep, many times every day, and from the beginning to the termination of the disease; and we always found the pulse to be slow, small, feeble, and occasionally intermittent, and never were there any vesicles or redness on the tongue.

Examination after death presented œdema of the whole body, or of the head and neck only; wasting generally, and of the hind limbs particularly: warmth disappeared the moment life had fled. The skin was pale; the cellular tissue exhibited a transparent or pale yellow infiltration; the muscles were softened and infiltrated; layers of fat covered the parietes of the abdomen, which was filled with a colourless fluid; the stomach and intestines were remarkably pale; the liver was sound, or tuberculous, or filled with hydatids; the bile was thin and oily; the kidneys were soft, and contained a very small quantity of blood; the bladder was sometimes full and sometimes empty; the parietes of the intestines were often much attenuated; the bloodvessels of the mesentery were faintly apparent; the

chyliferous ones were distended. In the three first stomachs were remains of green food; the fourth stomach and the small intestines were empty: the mucous membrane of the digestive passages was pale and humid; but in three carcasses there was intense redness of a small portion of the villous tunic of the rectum. The blood in the large vessels was fluid; it did not coagulate; it contained a great quantity of serum, and very little fibrine: there was a sensible diminution of the colouring matter, and the general aspect of the blood was watery. The thoracic cavity was filled with transparent fluid—there was also hydropericarditis: the lungs were sound, but pale and collapsed; they were rarely tuberculous, and two of them contained hydatids. The heart was soft and pale; the left cavities were empty: in the right cavities was fluid blood of a feeble black tint; and the bronchial passages were filled with spume. In the cranium there was effusion of transparent fluid in greater or less quantities, and the lateral ventricles were often filled with it. The spinal canal was not examined.

The Arabs believe that the disease will be mortal when a tumour forms under the throat; but in the early stage of the disease they think it possible to arrest its progress by removing the exciting causes. Adult sheep have greater chance of escaping than very young or old animals. If they are left in the places in which the malady has begun to appear, few sheep escape its fatal influence. If the infected animals cough, or have diarrhœa, the termination of the complaint is hastened, and the patients die in about twenty-five or thirty days.

For many years the government of Egypt has occupied itself in breeding silkworms, and a great number of establishments have sprung up in which a beautiful and very fine silk has been produced, and which has been sold at a great price. At different times one or the other of us has often visited these manufactories, and has followed the silkworm through all its transmigrations, and examined the food by which this valuable insect was supported, and studied the influence of that food at different periods of the life of the worm, and the diseases to which the worm was ordinarily exposed; and we are assured that in Egypt, and particularly in the Delta, the rot commits dreadful ravages among them, and destroys a very great number.

The worm acquires a premature bulk—it feels soft when touched, it ceases to be lively, it becomes transparent, gorged with fluid, it eats with difficulty, and soon dies. These establishments are conducted by Syrians, who immediately recognize the disease. They attribute it to food of too watery a nature, and to the use

of leaves gathered too young, and given too early in the morning without having been exposed to the influence of the sun.

Certainly these causes may produce the disease now under consideration, but there is another cause unknown and unsuspected, both by the Arabs and Syrians. When the mulberry trees, being too young, no longer furnish sufficient nourishment, the persons charged with the care of the worms give them, during seven or eight days, the tender leaves of the mallow. This food is certainly injurious: the worm immediately suffers by it—it is soon attacked by the rot, and which never quits it except the food is speedily changed.

Before we determine the immediate causes of the rot in sheep, it will, perhaps, be necessary to enter into some detail of the peculiar conformation and habits of this animal. This, perhaps, will explain the reason why the rot attacks this animal oftener than and in preference to any other living creature, and will also elucidate the nature of the malady, and lead us to a rational mode of treatment.

A skilful agriculturist, M. Gasparin, in a very instructive work on the contagious maladies of sheep, has entered into some interesting anatomical and physiological considerations. "The sheep," says he, "has a nervous system, possessed of little irritability: he is rarely attacked by spasmodic diseases; his bones are spongy; the principle of vitality is very feeble in him; his muscles are weak, the fleshy columns of his heart are small; but the liver, and the digestive organs, and the lymphatic system, are developed. He has little blood compared with man, the horse, or the ox. A full grown lean sheep, weighing twenty-five kilogrammes ($55\frac{1}{2}$ pounds), has about two kilogrammes (nearly $4\frac{1}{2}$ pounds) of blood, while, according to M. Richerand, an adult lean man, weighing seventy kilogrammes ($154\frac{1}{2}$ pounds), has twenty-eight or thirty pounds of blood. The result of such a structure is that the locomotive powers of these animals are generally feeble, and this is proved by the difficulty with which a sheep can be made to travel four or five leagues per day."

If this is true, it will be evident that the diseases to which, in the ordinary and natural course of his life, he will be subject, will differ from those of man or of the horse, whose organization is more complex.

It will also be evident, that to make such an animal capable of rendering the services which man expects from him, and furnishing the products which are so necessary to our existence, the utmost care must be bestowed on him. In those countries where the management of the flock is confided to ignorant shep-

herds, and where the art by which other animals are improved is despised, the sheep have degenerated; they are subject to the rot; and they yield to the miserable being who is employed about them, and lives by them, productions comparatively worthless.

All the veterinary surgeons of Europe agree with regard to the exciting causes of rot. Chabert, Dupuy, Hurtrel D'Arboval, &c. &c. describe low situations—the feeding on marshy plants, as the different species of the ranunculus, or plants which grow in or under the water—the drinking of stagnant waters filled with insects, or where the fluke-worm and the leech abound—the infected air of the sheepcote, and the sudden change from dry to green food. In England, an extraordinary experimentalist, Bakewell, produced the rot whenever he pleased, by turning his sheep on pastures that had been flooded.

That which this celebrated practical agriculturist was enabled to effect is observed every year in Egypt. As soon as the waters of the Nile begin to subside, the pastures which were submerged are speedily covered by a tender rushy grass, which the natives call *dyssa*. The sheep are exceedingly fond of it, and they are permitted to feed on it all day long, their feet being buried in the mud; and, as we have already said, for many months they have no other aliment. In the course of a very little time they begin to get fat, when, if possible, they are sold. Their flesh is then exceedingly delicate; but soon after this the disease begins to appear, and the mortality commences.

In the neighbourhood of Abou-Zabel there is a vast tract of low land which the Nile overflows for two months. When the waters retire it is found to be covered with these rushes. The neighbouring inhabitants hasten to drive their flocks thither, and they leave them on the marsh from the rising to the setting sun. Every year the rot carries off numerous victims; but it is a matter of general remark, that this disease is more frequent and fatal when the sheep are first turned on the newly recovered pasture than afterwards when the ground has become dried and the rushy grass harder. The rot continues to prevail at Abou-Zabel about fifty or sixty days.

In the Delta the rot lasts longer. This part of Egypt lies very low; it is cut in every direction by an infinity of canals, the waters are out a longer time, and there is more marshy ground. The very habitations of the Arabs are in the water—the rush is the only food for their flocks during three or four months—the sheep pasture in the midst of the mud, or on the borders of the marshes and canals—the rot attends every step, and thousands of them perish. The Arabs are not ignorant of the cause of

this enzootic. They know that the rush, *dysse*, is hurtful; and they accuse it of producing this disease, which they designate by the name of *dyssa*.

The reader will probably ask why, the cause of the evil being known, the Egyptian does not endeavour to preserve his sheep from a pest by which their numbers are yearly diminished. Whoever has visited Egypt can readily answer that question. The fellah does not concern himself about the preservation of those animals which are with others the objects of assiduous care. Whether they prosper or not is an affair in which he is, comparatively, little interested. Poor, humiliated, brutalized, he vegetates in a little habitation, the entrance to which is half closed by filth. This pitiful cabin he has constructed close by a marsh, and by the side of a cemetery, through the crevices of the tombs of which the most infectious odours are continually diffused.

The hope of escaping from oppression and plunder forces him to adopt this mode of conduct. Plunged in an abyss of misery, the Arab seeks to avoid every labour, the fruit of which will not be his. Industrious or idle, it will be the same to him. No improvement will be effected in the breeds of domesticated animals until the inhabitants enjoy those rights and that protection which a barbarous government has torn from them.

In 1829, one of us, by order of the viceroy, visited many of the provinces of the Delta, to oppose, if possible, some barrier to the plague, which decimated the flocks, so indispensable to the tyrant as well as the slave. The inhabitants laughed at the advice which we gave them as to the management of their sheep. "Before we concern ourselves," said they, "with the preservation of the health of the oxen and sheep, we demand the means of our own existence, which they now refuse us!" Dr. Pariset and one of us were resting in the house of the chief of one of the villages. We were talking with him of this pest, and the presumed cause of it, and the possibility of effecting its utter disappearance from Egypt. Our host laughed, and said, "This pest has always raged in our villages, and *it would not be wise* to get rid of it. Let our families be comfortably lodged, and let them have wholesome and proper food, and not only this pest, but many another will disappear from our country."

All the agents capable of producing rot being well known, it remains to determine their mode of action, and especially to ascertain the nature of the changes which they produce.

It has been too much the custom in our medical schools, forgetting the different organization of different animals, to trace disease in all its forms to one principle alone, viz. irritation: but,

without entering into minutiæ, surely it must be absurd to imagine, that in every case the diseases of the horse are precisely the same as those of sheep. The system which predominates in the first is comparatively weak in the second; and can the animal which possesses scarcely two kilogrammes of blood be as subject to inflammation as the horse and the ox, in which this fluid abounds?

The opinion of Hurtrel d'Arboval, with regard to the nature of this complaint, is the most generally known, and deserves notice.

1. According to this author, "the debility which always accompanies disease in the sheep is a proof of internal inflammation, and which inflammation he traces to the mucous membrane of the stomach and bowels.

2. "Water, taken in considerable quantity, impedes the digestive function—it irritates by its mass—it presses upon the epigastrium, where it produces a sedative impression on the mucous membrane of the intestines; but this is soon succeeded by irritation, and even by inflammation.

3. "Plants deteriorated in their quality—without juice—fermenting—deprived of their pleasant and stimulating taste, rob the system of those nourishing and renovating fluids which it needs, and become the foundation of divers gastro-intestinal irritations, which re-act on other organs.

4. "The extreme warmth of the sheepcotes irritate the skin, with which the mucous membrane of the stomach sympathizes, and the irritation is propagated to the intestinal canal and the biliary passages." And all these inflammations are produced where there are only four pounds of blood! Excellent pathology!

But the sheep die. Behold the traces of all this inflammatory action. Let M. D'Arboval speak for himself:—

"The cellular tissue is infiltrated with serum, the muscles are discoloured, pale, macerated, softened—the substance of the liver is soft; it breaks between the fingers; sometimes it is scirrhous, and its vessels obliterated—in old beasts the kidneys are white, flaccid, infiltrated—it is the same with the stomachs and intestines. The peritoneal surface is smooth, transparent, and bathed with more or less serosity. The mucous membrane is thick set with dull coloured spots—there is hydrothorax and ascites. The blood does not coagulate—it is more serous than in health."

Behold, then, an inflammatory disease which scarcely leaves a trace of its existence in the organs which it attacked.

According to the reasoning of M. Hurtrel D'Arboval, aqueous plants, and water itself, produces inflammation, of which ascites and hydrothorax can only be purely secondary consequences;

and it also follows, from the same reasoning, that animals nourished by dry or succulent food will be less exposed to these inflammations. But in animals affected by the rot, the blood is fluid, and does not coagulate, while those that have been well fed have fibrinous high-coloured blood. Then, proceeding step by step, we shall be constrained to admit, that inflammation, characterized by redness, injection, &c. is most frequent in animals whose blood is aqueous and little coloured!

The rot, does it occur in elevated countries, and where the sheep feed on dry aromatic herbage? The Bedouins do not fear it, while their cattle feed among the sands upon succulent healthy plants, and among which a portion of salt is usually found; but if they are forced to encamp on the borders of lakes and canals, they are immediately attacked by the disease, and which again disappears when they return into the desert. Is it possible to produce inflammation by means of aqueous plants and water? Redness, injection, and pain are the characteristics of inflammation—can they exist when the blood is aqueous, little coloured, fluid, and without fibrine?

We pray M. D'Arboval to tell us, whether the rot in silk-worms is also the consequence of gastro-enteritis.

In order to arrive at the conclusions which he has stated, the author of the Dictionary of Veterinary Medicine has been compelled to make facts bend to his pre-conceived opinions and views. In the living being he scarcely finds the slightest character of inflammation: in the dead body there exists none at all. He is, then, forced to find inflammation in the digestive passages, or to make one out of the humoural system; and he maintains that all these changes of the fluids are consequent on those of the solids.

It would seem, according to this author, that Chabert, Huzard, Dupuy, and many other authors of the first reputation, have written mere nonsense when they classed the rot among the diseases of debility *(les maladies asthéniques)*. We rank not among those who are anxious to trace new paths; rather, we are content to profit by the observations of our brethren; and we would ask M. H. D'Arboval, whether the rot may not be an essential disease, dependent on a primitive thorough alteration of the blood?

The animals remain in the sheepcote, fed on dry provender of good quality; and the proprietors derive from them sufficient profit in the form of milk, flesh, and wool. These sheep are sent into a marsh, or to the borders of a lake or canal; they feed on tender plants covered with moisture—their health is undermined—they become dispirited, feeble; in a word, they are

seized with the rot. Their carcasses are opened, and we discover the disorganizations already described. What first naturally presents itself to our minds as the cause of death? In the sheep-cote they were healthy and strong—all the functions were perfectly executed—the muscles were firm, solid, because the food was good. In the marsh the grass contained nothing but water. Effusion in the abdomen, the thorax, and the cellular tissue was the consequence.

The solids derive their nourishment from the fluids. There can be no doubt of that: but if these aliments contain little or no nutritive matter, the solids will suffer; and the evil will increase until the disease of which we are treating is produced. Marshy herbs are swallowed—the digestive organs are unable to extract from them anything but water; that water mingled with some of the products of the secretions, is absorbed by the veins, or by the chyliferous vessels, or by both. The thoracic duct carries the new chyle into the circulation—the blood is formed from it, and derives from it the materials of its composition. This unnaturally fluid chyle, can it furnish the fibrine? can it contain the necessary elements for the formation of good blood? This blood, driven by the heart to every part of the frame, can it carry life to all the organs, tissues, viscera? and these organs, tissues, viscera, can they receive the principles necessary for their maintenance if the blood is so aqueous and without fibrine, as in the rotted sheep? The capability of excitation must be in proportion to the degree of nourishment.

The circulating living principle of Hunter is here nothing but water—the body is soaked with it—it transudes everywhere—the muscles are soft, discoloured, humid—the cellular tissue is infiltrated—the animal dies, because the matter introduced into the digestive passages does not furnish the system with its essential aliment. All this seems to us perfectly rational. It has been said that the fluids can be diseased only secondarily by means of the changes which certain organs have undergone: thus the stomach and intestines, reacting upon the substances which they contain, become irritated and inflamed;—but irritation and inflammation give some signs of their existence, and, ordinarily, leave traces behind them, when the animal ceases to live. We meet with nothing of this kind in animals affected with the rot; on the contrary, inflammation is rare, and is established with difficulty in an animal that contains little more than four pounds of blood. If the principle contended for by the physiological school were admitted, we should ask how an inflammation once established disappears by the mere change of food; for that is not an hypo-

thesis: we do save the sheep attacked by this disease, by a change of food in the early stage of it. Can it be contended that aquatic herbs and water itself produce inflammation and fever; while any food, beans, straw, and salt, not only do not produce fever, but, on the contrary, are the most efficacious remedies of it?

[To be continued.]

HYDROPHOBIA COMMUNICATED BY A COW.

It has been asserted by some who hold a high rank both in the veterinary and medical world, that rabies can be communicated by those animals only who use their teeth as weapons of offence. We have often wondered at the unhesitating and dogmatical way in which this assertion is made, for we are ignorant of any theoretic principle on which it could be possibly grounded; it is contrary to occasional facts, well known to all who have paid attention to the subject; and it is likely to lead to dangerous and fatal neglect of proper precautionary means.

A late number of the Journal Théorique has added another to the cases of death succeeding to inoculation with saliva from a rabid ruminant, and also of the fearful period during which the virus may remain inert in the frame.

A cow, in the department of Jura, was bitten by a dog affected with rabies. Some time afterwards she became dull, and refused all kinds of food. She approached to some water which was offered to her, and made repeated but fruitless efforts to swallow it. A woman that had the care of her imagined that some foreign body was lodged in the pharynx, and prevented the animal from swallowing; and she thrust her hand into the mouth of the beast, and to the very back part of it, but found nothing. In doing this her hand was slightly scratched by one of the teeth of the animal. It was soon afterwards sufficiently plain that the cow was rabid, and she was destroyed by order from the magistrates.

A year afterwards the woman began to have frightful dreams, in which she thought that she was pursued by two enraged animals, the cow, and the dog by which it had been bitten. She had dread of water, and she died of rabies in a state of horrible suffering, attended by circumstances peculiarly lamentable.

Y.

ON THE POISON OF THE YEW-TREE.

By Mr. JAMES BEESON, *V.S., Amersham.*

SINCE divers opinions exist as to the effect of the yew-tree on the horse, an account of the following circumstance may be deemed not altogether unworthy your notice:—

On Friday the 5th instant, I was sent for in haste to Mr. Ives, of Priestwood, near Great Missenden, Bucks, a highly respectable farmer of that place. The messenger informed me that two horses had died suddenly in the field while at work; and Mr. Ives wished me to come immediately, fearful that others might fall also. I rode away without delay, and proceeded in the first place to examine the living horses, and satisfied myself and those about me that they were very well; and then went with Mr. Ives into the field to examine the dead ones. Having laid open the abdomen, and while removing the intestines, the first thing that particularly claimed my attention was the smallness of the stomach; it was contracted to one-third its natural size. Night now having overtaken us, we took the stomach home for further examination, leaving every thing else behind for the morrow's daylight. The stomach contained only a small quantity of chyme, with a branch of yew-tree of small size. The villous coat of the stomach exhibited patches of ecchymosis. From this circumstance I was led to suspect that the horses were poisoned by eating the yew-leaves. I went next morning for further investigation of the matter, and found a considerable quantity of yew throughout the small intestines and cæcum, and a little in the colon.

I examined the other horse, and found him precisely the same as the first. His stomach was alike contracted, and exhibited the same kind of patches of inflammation, as also did the inner coat of the small intestines of both horses, but not so much as the stomachs. The thoracic and abdominal viscera were otherwise quite healthy. The brain appeared not to have suffered any change from a healthy state; the membranes were not more vascular than usually observed in health: there was no congestion of the vessels, certainly not; but the fluid generally observed in the ventricles of the brain was, in the instance before us, entirely wanting. Not a single drop escaped on detaching the brain from the ethmoid bones, nor was there any in the lateral ventricle. One brain was examined on the third day, and the other on the fourth day after death.

Mr. Ives's horses were employed that day in carrying clover

seed, and, while the waggons were shifting about, the trace horses were put under a very fine yew-tree which stands in the rick-yard, and were seen cropping the tree by the carter; but he was totally ignorant of its baneful effects on the animal body. They died within three hours of the time they took the yew. The driver said he did not perceive any symptom of the slightest derangement or incapacity in either of them until they staggered a few paces—fell—and, before the harness could be taken off, were dead.

I think there can be no doubt but that they were poisoned by the yew.

I shall feel much pleasure in sending you the result of some experiments on the first subjects I meet with designed for the dogs.

CHOLERA IN A MARE.

By Mr. E. C. Bull, *V.S. Huntingdon.*

A very singular case has fallen under my observation, a description of which will not, perhaps, be thought unworthy of notice.

I was called at 5 P.M. on the 15th of the present month, to see a mare, five years old, with a foal of six months, belonging to Mr. Knighton, of Huntingdon. She was perfectly well in the morning; but I found her at the time stated very much tucked up, voiding copious watery stools, of a fœtid smell and dark colour; the pulse at the submaxillary artery quick and very feeble; extremities very cold, the nose and ears particularly so; the eyes very dull; the breathing much oppressed; and there seemed to be suppression of urine. I bled her, and obtained with difficulty three quarts of dark treacley blood. I gave her ℥j of laudanum and ℥j of spt. nitrous ether, and administered an injection of laudanum and starch.

7 o'Clock.—Much the same. I attempted to bleed her again, but could obtain only half a cup full. I repeated the injection, and blistered the belly largely.

On the morning of the 16th she was much worse. I repeated the injection, allowed her to drink five quarts of warm water, and blistered the legs.

11 o'Clock A.M.—Purging stopped; pulse not to be felt; breathing very difficult; tongue blue, cold, clammy; the lips also very blue.

1 o'Clock P.M.—She fell down as if cramped; voided more fæces, of a much lighter colour, frothy, and with a putrid smell;

and there was much twiching of the legs. This gradually subsided, and about three o'clock she died very calm.

Post-mortem examination.—Bowels much distended with flatus, and congested in several places; as also was the bladder, and especially the lungs, which were gorged with blood; but there was nothing like inflammation of them, or solidification, or effusion.

We deem this a very interesting case, and thank Mr. Bull for it. We have ventured to give the disease a name, for many of the symptoms were identical with those of the Asiatic cholera in the human being. No medical skill could have saved the patient.—EDIT.

THE VETERINARIAN, OCTOBER 1, 1834.

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

AN ACCOUNT OF THE PUBLIC EXAMINATION OF THE VETERINARY STUDENTS OF THE SCHOOL OF ABOU-ZABEL, IN JULY 1833.

COLONEL Hassein Bey, delegated by the minister of war, presided, supported by the cheik Hassan-el-Atthar, the Chief of the Islamites, several Ulemas, and many of the Europeans employed in the service of his Highness the Viceroy. A jury had been appointed by the Council of War for the examination of the pupils, consisting of MM. Dibadji, Member of the Council of Health, and Duvigneaux, Bernard, Ficher, Célésia, and Figari, professors. Dr. Gaëtani, Member of the Council General of Health, was appointed president of the jury.

Dr. Gaëtani first addressed the assembly in the following words:—

"The veterinary art, the practice of which can be traced to a most remote epoch, was, for revolving ages, exercised by men strangers to scientific acquirements. Veterinary medicine, reduced to the lowest state of vegetative life, could no longer render to society the services which it had a right to expect from it. In the destiny of some things, it is often useful to be undervalued and despised at their commencement; and to have to struggle with diffieulty and disadvantage against the

ignorance and the prejudices of the vulgar: but there will always arrive a time when men will abandon error, and when the truth, revealed in all its beauty and worth, will be welcomed as it ought to be.

"The history of the civilization of modern Europe shews us the veterinary art disgraced, degraded, and identified with ignorant men, incapable of comprehending its importance. They who devoted themselves to every other science, did not deem this worthy of a moment's attention; as if to be useful to, and to increase the happiness of beings endowed with life like itself, were not the noblest attribute of human nature.

"At length public calamities prevailed to a frightful extent. The devastations of the epizootics frightened the nations of Europe; and veterinary medicine, which alone could remove these evils, was raised from the abject state in which it had languished, and gratefully placed in the foremost rank of the sciences useful to man and to society. France, taking the lead of other nations, founded the first schools of veterinary medicine towards the end of the last century. These noble institutions soon enriched their country by sending into its various districts well-instructed and honourable men; and their endowments and their services quickly proved to other nations the necessity of following the example which had been given them. Then were seen to arise, the envy of the schools of medicine, veterinary institutions in Italy and England, and Spain and Germany. A new science sprung up, and in France especially under the powerful impulse of the genius of its founder, and it rapidly advanced towards its glorious destiny.

"Useful to every one, veterinary medicine is indispensable to the welfare of those who derive their principal riches from agriculture. This truth could not long escape the penetration of Mehemet Ali, and, for the prosperity of Egypt, he solicited from France a man who was capable of establishing a school of veterinary medicine on a solid basis, and resembling the French institutions.

"M. Hamont, charged with this task, as honourable as it was difficult, has justified the confidence placed in him by the Viceroy. His activity and perseverance have established a school, which he continues to direct; and the benefits of which, already evident, are sure pledges with regard to the future.

"Arrived at the epoch of the second examination of the pupils of this school, and being appointed by his Excellency the minister of war to preside over the jury, I will endeavour to justify the good opinion of my superiors by the strictest impartiality; thus only can I reconcile myself to my own conscience, or satisfy

the public expectation, and prove myself worthy of the confidence with which his Excellency Akmed Pacha has honoured me."

M. Hamont, the founder and director of the school, then rose. "At about this time in the last year," said he, "we laid before you a report *(compte rendu)* of our proceedings, and a numerous auditory witnessed with surprise and with satisfaction our first success in a new science, yet one of the greatest utility, and which innumerable difficulties seemed to conspire to crush in its birth.

"Being called upon a second time to narrate the transactions of the school, I cannot better fulfil my task than by rendering you eye-witnesses of the progress made by the pupils in the studies which they have pursued. Recently called into existence, this institution, which you now honour with your presence, is anxious to submit to the judgment of scientific men a summary of their labours, and to exhibit the fruit of their exertions. The advantage of these periodical and solemn assemblies has been long acknowledged in every part of Europe; and these meetings are especially necessary in a country against the prejudices of the inhabitants of which we are daily compelled to struggle.

"An art, a liberal profession, has penetrated into Egypt under the especial protection of the chief of the government. The people, immersed in ignorance, recognized not its utility. Embued with principles altogether at variance with ours, they were little disposed to listen to our instructions; and they only began to abandon their old and hereditary customs and errors when some of their countrymen, most respected for their learning, declared in favour of the new institution. 'Appeal to such persons; shew them what you have effected; indicate and develop to them the object at which you aim, and the importance of that object, and you will most readily arrive at the point you are anxious to reach.'

"When it first endeavoured to establish itself in Egypt, veterinary medicine was compelled to declare war with the superstitions that covered the country, and under the influence of which the people had lived until the appearance of Mehemet Ali. Abandoned to a miserable fatalism, the majority of the Egyptians were amazed and stupified at the innovations of their master. They were not recovered from the astonishment caused by the foundation of a school of human medicine, when they heard it announced that the cattle were about to have their physicians.

"The opposition which we have experienced from such people was pardonable; it was natural, and easily explained: it was

necessary only to instruct them, in order to cause this opposition to disappear; it is this which you see us effectually accomplishing, by little and little. Our path has been smoothed in this respect; but it has been beset with other obstacles difficult to overcome, and different from the first, because ignorance was not the sole cause of their existence.

"Nothing, however, could terrify us even for a moment; nothing could force us to retrograde, nor even to remain stationary at the point we had reached. The more numerous the obstacles became, the more our efforts increased. We should have been culpable, indeed, if we had acted otherwise, when the illustrious prince who came to give to Egypt a new existence was, himself, an example of assiduity, zeal, and perseverance. Among the principal attacks directed against us, some aimed at nothing less than the overthrow of the institution. The detractors of the system of reform adopted and carried on with vigour by the government alleged certain reasons for the abolishment of the veterinary school, which it is not of importance for me to relate here: but, among other things, they said, that the study of veterinary medicine was superfluous; that it was a very simple affair, and that the farriers of the country knew all that our schools could teach.

"Permit me, gentlemen, to request your attention for a moment to this objection. It is almost a half century ago since a celebrated physician, *Cabanis*, full of love for the science which he cultivated with so much success, expressed himself as follows in a report to the Council:—'For a long time the veterinary art was regarded as the degradation of medicine: struck down, as it were, by a sort of anathema of general prejudice against it, it dragged on its existence, disfigured doubtless by ignorance and superstitious practices, or, rather, it no longer had real existence. But these ridiculous prejudices are dissipated, and we no more think that the art of preserving the lives of useful animals can degrade those who practise it. That art, born, if we may so say, in our own days, has made much progress; it is become the subject of many important works; and the distinguished individuals to whom it owes this new *eclat*, occupy, in the public opinion, the place which is their due, and which the utility of the art will, henceforward, assign to them. The time is at hand when the two medicines, human and veterinary, will in some sort be one—when they will be founded on the same common principles, and differ only in the application of these principles.'

"At the present day, gentlemen, there exist in all Europe schools in which veterinary medicine is taught, the pupils of which fill

an appropriate situation in the cavalry regiments, establish themselves in the different provinces, *and alone possess a legal right to practise on the diseases of animals.*

"The theoretical knowledge which a veterinary surgeon possesses is precisely that of the human surgeon.

"To say that men as ignorant as the farriers are commonly found to be are equal to the proper discharge of their duty, and that they possess as solid a medical education as that which can be obtained at institutions like this, is as absurd as to compare the knowledge of a barber with that of a surgeon : it is to insult all Europe. Everywhere there is occasional need for the services of the veterinary surgeon; and wherever we turn our eyes, we perceive the benefits which he alone can render.

"Beaten at one point, the enemies of civilization speedily rallied at another, with renewed activity and different weapons. They blamed every thing, condemned every thing. The mode of instruction was, according to them, essentially wrong; and in their delirium they even dared to doubt and deny the certainty of medicine.

"The mode of instruction created, rather than adopted, by M. Clot, is the only one admissible in this country. It is good, and the progress of time has fully exposed the malicious and groundless objections of its detractors. The confidence in medicine is become general. That science is founded on nature as well as every other. It is found among the savage hordes, as well as in civilized society ; and its study is one of the truest and noblest species of worship that we can pay to the Most High.

"You, gentlemen, who compose the jury, charged to report on the merit of our students, we commit our cause with perfect confidence to your judgment and impartiality. You are able to appreciate the difficulty of our position, and the obstacles which we have overcome in order to arrive at the point at which you find us. We wish not to exaggerate our labours ; but the commencement of every thing is difficult. New undertakings require encouragement; and we claim all your indulgence in favour of an institution, of the importance of which you are fully sensible.

"Gentlemen students ! a personage (Akmed Pacha), as distinguished by his birth as by his personal qualities, would have presided over this assembly. Already, on a similar occasion, he has deigned to encourage your first efforts. Disappoint not the hopes he has placed upon you, but render yourselves worthy of his powerful support. I would remind you of the proofs of deep interest in the welfare of this establishment which he has already lavished upon you ; I would relate with what eagerness

he has repulsed the attacks of our enemies: but he has commanded me to be silent.

"The knowledge which many of you have acquired in the bosom of this establishment, will enable you to render important services in the situations in which you may be placed: but the knowledge of your profession is yet far from being complete. Your studies should continue to be extended and various, and your application should be unremitted. The path which lies before you, and on which you are about to enter, is far from being plain and smooth. You will encounter many obstacles: fear them not; courageously attack them, and leave them not until they are completely overthrown.

"In the struggle which you will have to maintain, be patient and firm. If you are attacked by unfounded prejudices, repel them, but do so discreetly, and never wilfully offend them. It is by mild persuasion, and by shewing the superiority of your knowledge and conduct, that you will at length conquer them."

The examination of the students now commenced, and continued during three days: it extended to anatomy, physiology, the exterior conformation of domestic animals, external pathology, and the materia medica.

The first class consisted of twenty-six pupils, three of whom were absent on account of illness. *Of these three were appointed aides major, and seventeen sous-aides!*

In the second class were nine pupils, two of whom were ill, and absent. *All seven were placed by the jury in the first class!*

Of twelve others of which the third class was composed, one only was deemed worthy to be raised to the second class. Seven of these pupils had been only a few months at Abou-Zabel.

The answers of the pupils were generally very satisfactory. The great majority gave proof of scientific acquirement at once varied and solid. Those of the first class were long under a very rigorous examination in every branch of medicine which they had studied. The president of the jury, M. Gaëtani, to the strictest impartiality united considerable severity: this rigour extended itself to every member of the jury; and the happy result of such an examination did honour to the pupils of the school of veterinary medicine.

Besides the pupils who pursued the regular course of veterinary study, there was a preparatory school composed of younger persons, who studied the French and Arabian languages. The jury examined many of them, and assured themselves that

they had made considerable progress in their studies. This school inspired the liveliest hope of the future; it promised to be the nursery whence we should hereafter transplant our young aspirants; and who, by their previous knowledge of Arabic and French, would enter on their after course of study with more assured prospect of success. It was determined to present a memorial to the minister of war, praying that he would grant the means of more certainly and promptly attaining an object so desirable.

The examination was closed by the following address from the Scheykh Hassan el Atthar, chief of Islamism:—

"The treasure of the brave is the horse, mounted on which he enjoys the chase, or rushes to the combat. Skilful in the management of him, he precipitates himself on the enemy—he disengages himself—he returns to the charge, until the gates of victory are opened before him. They who undervalue him are enslaved; they who love him find in him their strength and protection. The horse, which is the strength of the brave, is one of the most valuable companions of men when he turns himself to the pursuits of peace. Beside this noble animal there are others which man has appropriated to himself, and which he compels to administer to his various necessities. The health of these animals is a point of the highest importance, and it is almost as necessary that veterinary medicine should exist as that which has relation to the human being.

"Founded, the one and the other, for the interest of man and the preservation of health, they may be considered as twin sisters, equal in rank and importance. Both these sciences had become strangers to our Egypt—there was not a vestige of them left, until it pleased the Supreme Being to reproduce them in all the freshness of youth, emancipating them from the opprobrium of ignorance, and breaking the yoke of superstition. May God crown all his efforts with success by whom these important benefits have been conferred, and who has made Egypt prosperous and happy under his government! His Excellency Méhémet Ali Pacha has brought from afar the most valuable books, the most newly invented and the most perfect machines, and the choicest and most delicate productions which industry has anywhere yielded. All these have been placed at the disposal of learned men arrived from Europe, and who have begun to scatter the pearls of their knowledge among the children of the Arabs eager to receive them. Among the number of these illustrious professors was M. Hamont, selected by his Highness to establish a veterinary school in Egypt. In a short space of time this school was created and provided with competent professors, and pupils intelligent and

assiduous. The founder of this new institution devoted all his energy and talent to the instruction of the young men who were committed to his care; and at length, thanks to his zeal and courageous perseverance, it has attained the third year of its existence, both for senior and junior pupils. To-day, an examination, sanctioned by ancient custom in all other schools, has taken place here, in order to test the knowledge acquired by the pupils, and which constitutes the principal glory and boast of the teacher. We have ascertained their respective degrees of proficiency, and we have assigned to each the rank which he merited. Such was the object for which this respectable meeting was first assembled, on the twentieth day of the month of Hou-chiggod the sacred, and in order fully to accomplish which it has continued its sittings three days. Called from the office which I have the honour to hold, to be present at this examination, I have seen and heard that which has delighted my eyes and my ears; and I have prayed that the reign of his highness may be prolonged, under whom the arts and sciences produce the happiest fruits; that reign, which may be termed the glory of the age in which we live."

We subjoin the report, afterwards given by M. Hamont, of the proceedings of these three days, and the circumstances connected with them, both antecedent and consequent. We particularly request the attention of our readers to it.

COMPTE RENDU.

"In the course of the scholastic year lately closed, instruction has been given on the following branches of study, by the Director of the school, namely, anatomy, physiology, the exterior conformation of animals, and external pathology. Materia medica has been taught by Professor Figari; and lectures on the practice of physic have been given by M. Célésia, director of the school of pharmacy. All these lectures have been translated for the use of the students; and the two last professors whom I have mentioned, have lectured at the same time to the pupils of the three schools.

"The veterinary anatomy of M. Girard, ex-Director of the Royal School of Alfort, forming two large volumes, has been translated and revised by M. Pharaon and the Cheik Mustapha, distinguished ulémas, and attached to the institution from its very foundation. It is now printed in Arabic; and the Cheik Mustapha, a sincere friend to veterinary science, has added to it an eloquent discourse, in which he has recapitulated the virtues of his sovereign, and shewn the utility of animal medicine in every part of the world.

"It is an evident fact, that veterinary surgery, once despised

and rejected by the mass of the Egyptians, is now regarded by them with surprise and admiration. The Arabs in the neighbourhood of the hospital come of their own accord to claim for their animals the succour of art; and resistance is everywhere weakened, although it was once great.

"We received into the hospital the regimental sick horses which the Turkish farriers had treated for a longer or shorter time. These poor animals, in order to arrive at the hospital, travelled six leagues through the sand, exposed to the burning heat of the sun. Having been previously ill-treated by these empirics, many of them died on the way: the others, cruelly driven on with the whip, perished soon after they had reached their place of destination, or were in a state which left but little hope of effecting a cure. I solicited the attention of the council of war to this point. The council delayed to concern itself about it, and our enemies derived from this calamity the means to annoy and injure us. Inspectors were then appointed, who soon discovered the mal-practice of the farriers. To remedy this, orders were given to the different commanding officers not to detain the sick horses more than twenty-four hours in the stables of the camp. I petitioned for, and obtained authority to inspect the different regiments; and to take away the wounded, the infirm, and the sick horses. This measure produced much good effect; and the state in which the horses were received into the hospital was less unfavourable. Nevertheless, in spite of repeated orders, and the vigilance of the minister of war, it was not possible totally to prevent the farriers from treating the sick and operating on the wounded horses according to their accustomed method.

"The remounts were badly managed. They had hitherto been entrusted to a Turk who knew nothing of horses, and to a farrier, who was sure to be bastinadoed if he found fault with a horse which the inspector deemed proper for the service. I directed the attention of the government to this point. Many horses proper for the artillery had been sent to the light cavalry, and *vice versâ*. Colts of two years old as well as horses of sixteen and twenty had been received; and many times, when inspecting the cavalry of his highness, I had seen arrive for the service of the regiments horses labouring under glanders and farcy, and mange.

"Abuses of this kind entailed on the service extraordinary expences—the horses compromised the safety of their riders, and sometimes of the whole corps, and they frequently occasioned immense disorder. The management of the remount we affirmed was a difficult matter—it ought to be committed to veterinary surgeons, and inspected in an especial manner by the minister himself.

"This frank declaration was followed by some disagreeable consequences. We had not as yet any veterinary surgeons sufficiently instructed, and capable of directing that service, and, at the same time, versed in military affairs. Nevertheless, to prevent as much as possible the repetition of these abuses, I had demanded that all the new horses should be brought to me before they were purchased for any regiment. The minister consented to this; but a difficulty then presented itself. Being the only veterinary surgeon in Egypt, I could not go every day to Cairo, and continue to teach my pupils. It was necessary then to bring the animals to Abou-Zabel, or let things remain *in statu quo;* and it was determined, in spite of my earnest remonstrances, that the latter should be the case.

"Another and a great advantage would have resulted from the measure which I wished to adopt: if the horses had been sent to Abou-Zabel, the pupils would have acquired considerable tact in the examination of these animals; and would have been better prepared for this important part of their duty when they quitted the hospital.

"On their side, as may be readily imagined, the persons whose mal-practices I had exposed were not inactive. They were continually exclaiming against the institution imported into Egypt by the genius of Méhémet Ali. Then, with a view to shelter themselves from any future surveillance, they attached to the depôt of the remount, with the title of veterinary surgeon, an ignorant renegade, to whom the council of health had a few days before refused the grade of sub-assistant. They went farther: the Turk, chiefly charged with the purchase of the horses, boasted of the ability of his protegé, and presented him to the superior authorities as a very talented man; and these intrigues succeeded so well, that the charlatan was presently named veterinary military inspector. He had castrated several horses with success, and he did not fail to turn this to the best advantage. 'The veterinary school was far inferior to the horse-gelder—he had rendered immense services, and the new institution of Abou-Zabel was only burdensome to the government.' Our antagonist began to control the proceedings of our school, and, supported by some influential men, he gained the confidence of the superior powers. He received and dispatched horses destined for military service, he accompanied the inspectors, and he corresponded directly with the minister. In the meantime our school had been visited by many of the superior officers, and by his Excellency Akmed Pacha, actually minister of war, and who had given a very favourable account of the institution. I have great pleasure in publicly stating that that illustrious personage was constantly

opposed to all these plots; and that on more than one occasion he expressed great disapprobation of what was going forward.

"To have resigned my situation would have been to compro- perhaps, the existence of that institution for which I was responsible in the estimation of his highness. No personal consideration prevented me from retiring; but I had devoted myself entirely to, and had become the property of that institution, the high importance and the success of which I had before this fondly contemplated. I therefore clung to the post which I occupied: I repulsed with firmness every attack directed against us, and still continued to denounce the existing abuses.

"I contended for a long time against a superior power. The council of war said that my reports wearied them: when, at length, this gelder, so highly esteemed, was accused and convicted of robbery. But while I was enabled thus to defend from external attack the establishment in which Egypt will hereafter glory, difficulties from within awaited me in the same establishment.

"At the opening of the school of Abou-Zabel, his Highness Ibrahim Pacha had issued a regulation, which determined that the pupils of the three institutions, human pharmacy, and human and veterinary surgery, should enjoy equal privileges. At the last examination three veterinary surgeons were nominated sub-assistant surgeons, and twenty-three were raised to the first class of students.

"These happy results were precious to me. They seemed to consolidate the edifice I had been labouring to raise: but I was deceived; it was not to be so. The council of war sanctioned the promotion of the pupils of human surgery and pharmacy, but they rejected our pupils, because in France the army veterinarians were not put on the same footing with the regimental surgeons. This had been secretly whispered into the ear of the minister, and I was unspeakably grieved at the decision.

"Thus continually at war, and tormented from within and from without, I saw no possibility of saving the institution from this dreadful precipice. Deceived in their most ardent wishes, would the pupils continue to labour? All hope of promotion or of advancement in life being cut off, it seemed to me that the institution could no longer continue to exist. Amidst the painful reflexions with which I was overwhelmed, one especially distressed me. In order to force on their improvement to that point which was so apparent at the examination, I had been compelled to adopt an extraordinarily rigorous and severe system of study. The students were not permitted to go out of the school from the rising of the sun until ten or eleven o'clock at night:—would they continue thus to labour, or could I demand of them this

devotion to their studies? Could I restore to their minds the courage and the good determination which they had lost?

"My anxiety, my embarrassment may be readily conceived. I knocked at every gate; I invoked the regulations of his Highness Ibrahim Pacha; I addressed letter after letter to the council of war, careless of the personal consequences of my importunity. My duty and the interests of the school urged me on, and I could not hesitate.

"'Wait,' some said to me, 'until the end of the year, and that which has been now refused to your pupils will be granted;' but what guarantee could I have for this? I had been defeated, and the business must be brought to a close in one way or another. This state of perplexity could not last long: either animal medicine must return to its native country, France, or the institution patronized by the viceroy must take rank among establishments of the first acknowledged utility. Everywhere repulsed, and without any hope for the present, at least, one person alone could relieve the anguish which I endured, and that was his Highness: but other affairs of the greatest importance then absorbed all his attention; and I was compelled for the present to defer, and even to renounce, the idea of appealing to him. Abandoned to myself, I relied on my own resources.

"The council of war, thought I, cannot, after all, wish the ruin of the school; they will ultimately revoke their present decree, so injurious to the progress of our art. I assembled the pupils. I exhorted them to continue to pursue the studies they had so praiseworthily commenced. 'Justice will be rendered to you,' said I to them; 'do not deceive yourselves about this: the very acts which have been so industriously resorted to, in order to injure you, prove the importance of your profession. If you now abandon your studies, your enemies will laugh; they will triumph through your fault. Be superior to these little calamities: instead of despairing, redouble your zeal and your activity—persevere, and you will conquer.'

"This short harangue raised the drooping spirits of the pupils; they submitted to that which I required, and I hastened to turn their present praiseworthy feeling to good account: but the neighbourhood of the two schools was a subject of annoyance. The pupils of human medicine, with their habits covered with gold lace, presented themselves before ours, who, although their equals in knowledge, had not been able to obtain similar badges of distinction. Then came a trying scene;—the pupils revolted against their masters—against me; and some of them, armed with bludgeons and weapons of iron, conspired to waylay and to murder me.

"I presented myself before them. I seized and chastized on

the spot the most mutinous; and the rebellion terminated. Their studies recommenced as formerly. I sent an account of the rebellion to the council of war. I dwelt on the causes which had produced it: they replied, that *I should have prevented it!!*

"These checks retarded for awhile the progress of the institution; but by increased application I was enabled to restore order within the establishment. Not an instant was afterward lost. The students instructed each other. They assiduously attended the lectures; and the hospital was always full. I hastened to give them the information which would enable them to discharge with credit and effect the duties of an army veterinary surgeon. My pride was piqued, and no effort was spared;—when I was informed that, as the price of my devotion to the institution, and the services which I had rendered it, *some friends and patrons* were preparing other annoyances of a nature so serious, that nothing but a brilliant examination could prevent them.

"All my efforts tended to this point; when a new circumstance compelled us to halt for awhile. We approached the month of the Ramadan, the Lent of the Musselmen. According to established custom, the directors of the other schools declared this to be a month of vacation. I ordered a continuation of study. A new rebellion broke out; the pupils declared that they would murder me if I persisted, and they refused altogether to work.

"Moderation, advice, were useless; the rebels were obstinate; and they barricadoed themselves in their dormitory. I closed the gates, placed sentinels at them, and informed the council of war of the state of things. They sent General Courchaud-Bey, an excellent officer, a man of sound judgment, and a friend to Europeans. His presence put an end to all our troubles; he punished those who were most culpable, and he restored perfect order.

"Some time afterwards, assured of the proficiency of my pupils, I demanded the nomination of a jury for their examination in the month Hil-hedga (July). My demand was at first refused: among other things they said, that I could not have an examination alone, i. e., without the other schools. His excellency Akmed Pacha was then minister of war. He exposed the malicious objections of our detractors, and the time for the examination was fixed.

"Until this moment I had been careful not to speak of military rank, and the association of veterinary with human surgeons in the same grade. Now, however, I invited, or rather claimed, discussion on this point. The minister replied, that, compelled to follow to the letter the French regulations, he did not dare to make an exception in our favour. I repeated my demand, and presented a memoir on the subject.

"The council, after having maturely examined the question in

litigation, announced that veterinary surgeons could only receive the same rank with sub-lieutenants, and with assistant sub-officers. This was a great point gained; but it was not sufficient if they wished to give to Egypt men well versed in medical science. At length the examination took place; and the jury, astonished at the high degree of scientific knowledge which our students evidently possessed, were compelled to confer on them superior commissions. They appointed three veterinary surgeons (aides-major) and seventeen second veterinary surgeons (sous aides). Then came opposition on the part of the minister; remonstrance on mine; and at length we met half way. The pupils named *aides-majors* were to receive, *while they continued in the school*, the pay of *sous aides;* and these last that of an inferior grade, yet only a little less than the other. The promotions accorded by the jury were to be recognized as soon as the veterinary surgeons joined the army.

"The favourable issue of this examination definitively recognized the rank among the scientific institutions which this school had demanded, and which it merited. His highness Méhémet Ali soon after came to Cairo, and I had the honour of presenting our pupils to him with their new decorations. He was already acquainted with the result of the examinations; and, after various questions with regard to the competency of the young men, their rank, the state of the school, &c., he authorized me, agreeably to my request, still to keep about me six of those who had most distinguished themselves, that I might prepare them hereafter to become professors, and to place the others in different regiments as appointments might occur.

"The Royal Academy of Medicine at Paris, to whom I had sent a copy of our first report, was pleased to nominate a commission to examine it. Their report was exceedingly flattering, and that illustrious society has expressed its good wishes for the prosperity of an institution which Egypt owes to Méhémet Ali.

"Thus, in the space of about three years, a veterinary school has been established at Abou-Zabel, and the military service of the army veterinarian perfectly organized. Twenty pupils have obtained the rank and decorations of *aides* and *sous aides*. I have sacrificed my repose and my health to the accomplishment of this great enterprize: interest never swayed me; and, although called upon for immense exertion, I have never had more than exceedingly moderate appointments. At one time, going by the command of his highness from Rosetta to Cairo, I had nearly perished by shipwreck; and I lost the little that I possessed. Many a time have I travelled through Lower Egypt to combat there the murderous epizootics. During the epoch of the cholera I quitted the school, and lent my assistance to and conducted the military hospital in the capital; and I did not quit it until I

was myself seized with this frightful disease. Others have had rewards and honours; and no one has heard me offer a single complaint of the numerous occupations with which I was charged. It is painful to me to recount these things of myself, and I am assured that I shall be pardoned for stating what I have been compelled to do.

"M. Clot, charged to engage in France a professor of veterinary medicine to assist me in conducting this school, has brought with him M. Prince, a distinguished pupil of Alfort, and one of the professors at Toulouse. We sincerely congratulate M. Clot on his success; he could not have made a happier choice: and our school rejoices to reckon among its professors a veterinarian so distinguished, for we are confident that he will materially contribute to the improvement of the veterinary art in Europe."

We make no apology for this lengthened detail of that examination of the veterinary pupils at Abou-Zabel, on which the future destiny of the institution depended. He must be a recreant to his profession who does not feel the deepest interest in this narration of the difficulties, and perseverance, and noble devotedness—the dangers, and the glorious victory of the founder of the Egyptian school. We would not omit one word of it. If all veterinary professors had drunk of his spirit, the triumph of our art would have been long ago assured.

We gladly and proudly record the names of the veterinary students who first gained military rank in the Egyptian cavalry; whose extraordinary merit wrung this act of justice from the powers of the day, prejudiced against them, and eager to find some plea for the continuance of their debasement; and upon whom, in fact, hung the fate of the Abou-Zabel school.

Aides Major.

Achmaouy
Mohamed Jounes
Mohamed el Mahaleouy.

Sous Aides.

Ibrahim Laz
Mustapha Alhé
Ib Assanem Osman
Ali el Mounageri
Akmet Agag
Assein Cassein
Mehemet el Laceni
Hassahan el Sembillaoueni
Hassan el Dep
Ismael Cherif
Ali Aboubathmeine
Abdel Auach
Abdelel Joussouf
Omar Abdalla
Mohamet Chemi
Mohamet Aboubachi
Achmet el Cherif.

We shall meet again with some of these champions of our art as we tread the paths of veterinary science; or, if not, their names ought to live in future story.

Y.

Veterinary Jurisprudence.

EMPIRICISM.

We extract from the *Journal Théorique* a humorous yet annoying account of the triumph of empiricism, and the degradation of the veterinary profession in some parts of France. Perhaps the experience of most of us would supply cases too closely resembling it in our own country.

Lantier, called "Le Curé of the great parish," lives near Montereau, of which he says that he is a proprietor. He was once a monk of the order "de Citeaux." He passed his youth in that celebrated abbey, of which he was the steward. Having the charge of the domesticated animals of that rich community, he included among the various functions of his office that medical routine, erroneous and absurd, which among persons of his profession, was so commonly allied with those notions of the supernatural agency of sorcery which had been bequeathed to them in the traditions of the predecessor of Solleysel. That author was his favourite hero—his oracle.

Compelled to fly from his convent when the revolution broke out, he became an assistant priest, and was, twelve or fifteen years afterwards, suspended by his bishop on account of a transaction similar to that which now brought him before the tribunal of Provins. No longer being able to live by the altar, he had recourse to witchcraft—from curé he became empiric. This profession was better than the other.

> Médicastre impudent, ignare et sans adresse
> Il se fait charlatan, ne peuvant chanter masse;
> Ancien moine empirique et prêtre déhonté,
> Il jongle, et rit tout bas des sots qu'il a dupés.

Nothing was talked of in the neighbourhood of Montereau but the skill of the curé of the great parish. Both men and beasts flocked from many a league around to benefit by his wondrous science; and then, if by chance the constitution of the biped or the quadruped, or the sanative power of nature, triumphed over the disease and the impostor, it was Hosanna to the curé of the great parish! what a wonderful man is the curé of the great parish!

The cows of Sébille, a farmer at Fontaines, had been frequently subject to abortion. Not knowing to what to attribute his misfortune, he thought that a spell had been cast over his dairy—that the demon of abortion (*l'avorton*) had taken possession of his farm, and, in a word, that he could not do better than to go to the diviner. His landlord, a man of sense, opposed

himself to this nonsense; but, taking advantage of his absence at Paris, Sébille and his wife set out one fine morning, and arrived at the residence of the curé.

"Well," said Lantier, "your cows slink their calves? We will set all that right. Have you brought me some of their hair?" "Here it is."—"How many cows have you?" "Thirteen."—"Oh! Oh! Have you any horses?" "Yes."—"How many?" "Six."—"How are they?" "Quite well: they eat and drink and work well. No animals can be better."—"So much the worse: they will very likely soon be ill. Go home, and come back to me two or three days hence: don't fail to bring me some of the hair of the horses, and in the mean time I will prepare that which is necessary."

Sébille obeyed these directions to the letter, and returned at the appointed time. "There is some of my horses' hair; but they continue to be well."—"Bah! there is evil hanging over you that you are not aware of. I am just come from a stable where there would have been sad mischief if I had not gone. Here are nineteen bottles of a wonderful medicine compounded by me; take them home, and give one to each of your stock: but remember, give the medicine to the cows by the mouth, and to the horses by the nose: don't fail to do this. Perhaps after the administration of the medicine to the horses they will appear very uneasy; if that be the case, give them the powder that you will find in this packet, having first dissolved it in *maid's water*, and all will be well; but—you owe me sixty francs."

Sébille gave him twenty francs on account, returned home with his precious bottles, and took especial care on the morrow punctually to obey the commands of the magician. What followed? That is very easily imagined. The cows, who took the medicine by the mouth, were little affected; but with the horses, into whose nostrils it was poured, it was a very different thing. A considerable part of the infernal potion, which was a strong decoction of the gratiola (the hedge hyssop) entered the windpipe, descended into the bronchi, and God knows what ravages it made in the pulmonary tissue.

An intensely acute pneumonia very soon displayed itself—the flanks beat violently—blood flowed from the nostrils, and the most fearful symptoms rapidly succeeded.

Sébille, frightened, roused himself from his apathy, and sent for M. Jacquemard, a veterinary surgeon residing at Nangis. He adopted a very proper mode of treatment, but he despaired of much success: in fact, one of the horses died on the second day, in torture distressing to see and difficult to describe; a second soon experienced the same fate; and when the curé,

whom Sébille in despair hastened to fetch, hoping that he might bring some antidote to the place to which he had sent his deadly poison, arrived, a third had ceased to live.

Lantier said, that he had made Sébille carry home with him a powder for the very purpose of calming this apparent fever in the horses, and which sometimes followed the administration of the drink. What was this powder? It will puzzle the most scientific practitioner to say what that powder was. Well! It was the *Lieutenant's powder**. What think you, veterinarians, would you have guessed at it?

Sébille then began to think of commencing an action against Lantier for the loss of his horses; and MM. Jacquemard and Lebeau were instructed very carefully to examine the carcasses. The skin being raised, the parietes of the chest were deeply infiltered with blood. A great quantity of sero-sanguinolent fluid was found in the thoracic cavity; the lungs were gorged with black blood, and their substance formed a gangrenous and putrid mass. The pleuræ were red, with considerable adhesions to the sides and the diaphragm; and there was a great quantity of false membrane, of a brown colour. The pericardium was filled with a fluid of a deep red colour; the cavities of the heart were empty. The viscera of the abdomen presented nothing particular; indeed, there was no trace of irritation.

Of the other three horses, Messrs. Jacquemard and Lebeau did not hesitate to declare that one of them would be broken-winded, and the value of the remaining two was materially diminished.

When the cause was heard, the curé declared that he had treated numerous animals in the same way during six-and-thirty years, and had never before met with any accident of the kind. He affirmed that he could readily detect the nature of every disease under which a horse might labour by an inspection of the colour of the hair; and he brought forward several witnesses who declared that they had derived benefit from his treatment of them. The mayor of the commune trembled and hesitated

* Solleysel (the hero—the oracle of the Curé of the Great Parish, and of some of the present day, wise enough in their own estimation, but whose actual science may be very fairly judged of by their fondness for such nonsense) describes the lieutenant's powder as composed of sage, carduus benedictus, long birthwort, speedwell, liquorice, elecampane, misletoe, zedoary, gentian, bay-berries, aniseseeds, cummin seeds, angelica, devil's bit, china root, mallows, lungwort, and coltsfoot. There is a great deal of ceremony about the mixing of these strange ingredients; but the result of the whole is, a powder "which will prevent and stop the course of many diseases; and if a man would preserve his horse from any indispositions which might befall him, he would give him every third month an ounce and a half of this powder." Y.

as he gave similar evidence: the dread of a charm or curse paralyzed his tongue, and sufficiently explained his strangely contradictory story. Another man was a perfect fanatic. He declared that no one but Lantier should ever treat his animals; and that if he lived twenty years longer he would enjoy the confidence of himself and his children.

The pleadings being heard, and the witnesses examined, the tribunal, says the writer of this curious history, did us the honour to demand an answer to the two following questions, Whether it was possible by the simple inspection of a portion of hair cut from an animal to tell under what disease he laboured; and what would be the effect of administering to a horse, through his nose, an irritating medicine like the decoction of gratiola.

We answered these questions to the best of our power, and endeavoured to remove the superstitious notions which it was evident the magistrates possessed. The attorney general (*procureur du roi*) described Lantier as capable of every kind of imposition and swindling, and required the application of the 405th Article of the Penal Code against him; but the tribunal acquitted the curé of the great parish of the malpractice alleged, and condemned Sébille in the costs. We cannot do better, for the edification of our *confreres*, than to give the judgment verbatim:—

"Whereas Sébille has acknowledged that Lantier has exercised the veterinary art during many years, and has acquired some reputation in the exercise of it; and that, attracted by that reputation, he had consulted Lantier respecting his cows, many of which had aborted;

"Whereas Lantier, consulted by Sébille with regard to his cows, advised him to give a drink composed of an infusion of gratiola, and a powder called the lieutenant's powder, and that Lantier offered his services to Sébille for the preservation of the health of his horses; that he ordered him to bring some of the hair of the horses, that he might judge of their state——that after having examined the hair he counselled him to employ the same means that he had proposed for the cows, but prescribed the administration of the drink by the nose——that this medicine was administered by Sébille, or his servants, but not in the presence of Lantier——that of the six horses three are dead, and the remaining three are in a bad state——that Lantier furnished nineteen bottles of the infusion of gratiola, and a packet of the lieutenant's powder, and demanded of Sébille for these remedies the sum of sixty francs, of which Sébille has actually paid twenty francs;

"Whereas Lantier could not be summoned before the correc-

tional tribunal of the police, only so far as these facts constitute a crime; and it is yet to be determined whether they do constitute a crime, and what is the nature of that crime; and that these questions, omission being made of that which belongs to the veterinary art, are the only ones to be examined;

"Whereas there is no law that forbids the practice of the veterinary art without a diploma—that the law of the 19th Ventose, ann. xi, applies only to the practice of medicine—that if no law prohibits the practice of the veterinary art without a diploma, the law of the 21st Germinal, ann. xi, cannot be applied to him who pays for a medicine which he has bought of an apothecary, and which he has employed in the medical treatment of animals;

"Whereas it was notorious that Lantier was not legally recognized as a veterinary practitioner, and consequently did not assume a false character—— that in recommending to Sébille certain medicines for the cure of his animals, he recommended those that he had often before employed with success——that the reputation, well or ill-established, that Lantier possessed, was founded on the success which had attended him——that if he has obtained success from the means which he recommended to Sébille, his prescriptions cannot be designated as fraudulent manœuvres to deceive the unwary——that, consequently, there is nothing in these facts that can be comprised under the term swindling—— that the death of the three horses of Sébille may be caused by unskilful treatment, but that in such case Sébille would have to charge himself with having misplaced his confidence;

"The tribunal acquits Lantier of the charge, and condemns Sébille in the costs, reserving to Sébille the right, if he chooses to exercise it, of proceeding against Lantier by the civil law, for damages on account of losses he has experienced."

The narrator thus apostrophises the curé, the neighbouring inhabitants, and his veterinary brethren:—"Fortunate curé! twice brought before the bar of justice, and twice acquitted, and triumphant! like Briareus with his hundred arms, who gained new vigour as often as he touched his mother earth, and deriving strength from the judgment of the tribunal of Provins, go purge and drench, and kill every living animal more impudently than before! I congratulate thee that thou didst not live in the 17th century: for if thou hadst exercised thy talents in 1691, thou wouldst have experienced the fate of the shepherds of Brie: they were foolish enough to believe that they possessed some magical skill in the treatment of quadruped disease, and they were unlucky enough to kill their patients, and they were condemned, curé of the great parish, to be hanged and burned.

"Whoever will, may now practise veterinary medicine with impunity; no one can now oppose a barrier to the spread of the most disgraceful empiricism. The decree of the tribunal of Provins has determined this.

"Come on, then; come on, shepherds, cowherds, cunning men, diviners, conjurers, empirical curés, and empirical old women, farriers, charlatans of every condition and every colour! To work! to work!! boldly enter the lists, and medically and fearlessly, and recklessly murder the beautiful cattle that cover our fields!

> Est ce peche? non, non, vous leur ferez, Seigneur,
> En les tuant beaucoup d'honneur!

"Veterinarians, who have grown pale during four years of study and of labour, what think you? will you cast from you those medical principles which you considered as the only sure foundation of fame and emolument? will you forswear the discoveries and the teachings of physiology? will you cast from you your instruments and return to Solleysel? No! but you will redouble your efforts to rescue your beautiful art from that shade of dishonour and disgrace in which it is now enveloped. You will petition for, you will demand, the establishment of a law which shall properly regulate the practice of veterinary medicine; and you will not cease until your efforts are crowned with success.

"A government like ours ought to regard and protect the interests of every class of its subjects. Already, in virtue of your education, you march in the same line with the practitioners of human medicine; and that general intellectual improvement which advances with giant strides will accord you that position in society which your science and your services merit."

Extracts.

Spayed Cows.

Some years since, I passed a summer at Natchez, and put up at a hotel then kept by Mr. Thomas Winn. During the time that I was there I noticed two remarkably fine cows, which were kept constantly in the stable, the servant who had charge of the horses feeding them regularly three times-a day with green guinea grass, cut with a sickle.

These cows had so often attracted my attention, on account of the great beauty of their form, and deep red colour, the large size of their bags, and the high condition in which they were kept, that I was at length induced to ask Mr. Winn to what breed of cattle they belonged, and his reasons for keeping them constantly in the stable in preference to allowing them to run in the pasture,

where they could enjoy the benefit of air and exercise, and at the same time crop their own food, and thereby save the labour and trouble of feeding them? Mr. Winn, in reply to these inquiries, stated that the two cows which I so much admired were of the common stock of the country, and, he believed, of Spanish origin; but they were both *spayed* cows, and that they had given milk either two or three years. Considering this a phenomenon (if not in nature, at least in art), I made further inquiries of Mr. Winn, who politely entered into a very interesting detail, communicating facts which were as extraordinary as they were novel to me; and supposing that they will prove equally as interesting to your numerous agricultural readers as they were to me, I am induced, on the request of a friend, to offer them for publication in your very valuable Journal, in the hope that some of the farmers who supply our large towns with milk, will deem them of sufficient importance to make experiments for the purpose of ascertaining whether the results which they may obtain will corroborate the facts stated by Mr. Winn, and which, should they be fully confirmed, may lead to great and important benefits, not only to farmers, but to tavern-keepers, and other inhabitants of cities and villages, who now keep cows in order that they may be sure of a constant supply of pure and unadulterated milk.

Mr. Winn, by way of preface, observed that he had, in former years, been in the habit of reading English Magazines, which contained accounts of the ploughing matches which were annually held in some of the southern counties of England, performed by cattle, and that he had noticed that the prizes were generally adjudged to the ploughman who worked with *spayed heifers*; and, although there was no connexion between that subject and the facts which he should state, it was, nevertheless, the cause which first directed his mind into that train of thought and reasoning which finally induced him to make the experiments which resulted in the discovery of the facts which he detailed, and which I will narrate as accurately as my memory will enaale me to do it, after the lapse of more than twenty years.

Mr. Winn's frequent reflections had (he said) led him to the belief "that if cows were *spayed* soon after calving, and while in a full flow of milk, they would continue to give milk for many years without intermission, or any diminution of quantity, except what would be caused by a change from green to dry, or less succulent food."

To test this hypothesis, Mr. Winn caused a very good cow, then in full milk, to be spayed. The operation was performed about one month after the cow had produced her third calf: it was not attended with any severe pain, or much or long-

continued fever. The cow was apparently well in a few days, and very soon yielded her usual quantity of milk, and continued to give freely for several years without any intermission or diminution in quantity, except when the food was scarce and dry; but a full flow of milk always returned upon the return of a full supply of green food. This cow ran in the Mississippi low grounds or swamp near to Natchez, got cast in deep mire, and was found dead. Upon her death, Mr. Winn caused a second cow to be spayed. The operation was entirely successful. The cow gave milk constantly for several years, but in jumping a fence stuck a stake in her bag, that inflicted a severe wound, which obliged Mr. Winn to kill her. Upon this second loss, Mr. Winn had two other cows spayed, and, to prevent the recurrence of injuries from similar causes with those which had occasioned him the loss of the two first spayed cows, he resolved to keep them always in the stable, or some safe enclosure, and to supply them regularly with green food, which that climate throughout the greater part of, if not all, the year enabled him to procure.

The result, in regard to the two last spayed cows, was, as in the case of the two first, entirely satisfactory, and fully established, as Mr. Winn believed, the fact, that the spaying of cows, while in full milk, will cause them to continue to give milk during the residue of their lives, or until prevented by old age.

When I saw the two last spayed cows it was, I believe, during the third year that they had constantly given milk after they were spayed.

The character of Mr. Winn (now deceased) was highly respectable, and the most entire confidence could be reposed in the fidelity of his statements; and as regarded the facts which he communicated in relation to the several cows which he had spayed, numerous persons with whom I became acquainted, fully confirmed his statements.

At the time to which I alluded, I endeavoured to persuade Mr. Winn to communicate the foregoing facts to the late Judge Peters, then President of the Agricultural Society of Pennsylvania; but he was restrained from complying with my request by an extreme unwillingness to appear before the public, and peradventure his discovery might prove not to be new, or doubts in regard to the facts might, where he was unknown, subject him to some degree of ridicule.

The many and great advantages that would result to the community from the possession of a stock of cows that would be constant milkers, are too obvious to require enumeration.

Should gentlemen be induced, from this communication, to make experiments, they will find it better to spay cows which

have had several calves, rather than heifers, as at that age their bags are usually large and well formed, and are capable of carrying a much greater quantity of milk without pain and inconvenience than young animals.

United States Southern Agriculturist.

Miscellanea.

A Fox-Hunter is a Jumble of Paradoxes.

He sets forth clean, though he comes out of a kennel, and returns home dirty. He cares not for cards, yet he strives to be always with the pack. He loves fencing, but without *carte* or *tierce;* and delights in a steeple chase, though he does not follow the church. He is anything but litigious, yet he is fond of a certain suit, and retains Scarlet. He keeps a running account with Horse, Dog, Fox, and Co., but objects to a check. As to cards, in choosing a pack he prefers Hunt's. In theatricals, he favours Miss Somerville, because her namesake wrote the Chase, though he never read it. He is no great dancer, though he is fond of casting off twenty couple; and no great painter, though he draws covers, and seeks for a brush. He is no musician, and yet he is fond of five bars. He despises doctors, yet follows a course of bark. He professes to love his country, but is perpetually crossing it. He is fond of strong ale and beer, but dislikes any purl. He is good-tempered, yet so far a tartar as to prefer a saddle of a horse to a saddle of mutton. He is somewhat tough and bearish himself, but insists on good breeding in horses and dogs. He professes the Church Catechism, and countenances heathen dogmas, by naming his hounds after Jupiter, Juno, Mars, and Diana. He cares not for violets, but he doats on a good scent. He says his wife is a shrew, but he objects to destroying a vixen. In politics he inclines to Pitt, and runs after Fox. He is no milk-sop, but he loves to tally. He protects poultry, and preserves foxes. He follows but one business, and yet has many pursuits. He pretends to be knowing, but a dog leads him by the nose. He is as honest a man as needs be, yet his neck is oftener in danger than a thief's. He swears he can clear any thing, but is beaten by a fog. He esteems himself prosperous, and is always going to the dogs. He delights in the Hunter's Stakes, but takes care not to stake his hunter. He praises discretion, but would rather let the cat out of the bag than a fox. To conclude, he runs as long as he can, and then goes to earth, and his heir is in at the death. But his heir does not stand in his shoes, for he never wore any thing but boots.—*Hood's Comic Annual.*

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MR. YOUATT'S VETERINARY LECTURES,

DELIVERED AT THE UNIVERSITY OF LONDON.

LECTURE XLV.

Turnsick, or Compression on the Brain in the Ox.—Hydatids in the Brain of the Ox.—Turnsick in the Dog.

THE act of turning round and round, and always in one direction, is not confined to the sheep. Some rare instances of it have occurred in cattle practice, accompanied by the same impairment of sense and consciousness of which I spoke in the last lecture as existing in the sheep, and evidently the consequence of partial compression of the brain. A case of it fell under my observation in 1829.

Turnsick in a Cow.—The milk of a cow suddenly decreased in quantity; she scarcely ate; rumination was suspended; the muzzle was dry; the mouth hot; the hair rough; and the roots of the horns hot; the breathing was laborious; the flanks tucked up, and mucus mingled with the dung. There was fever without any local determination immediately evident. She was bled and setoned, and put on a mash diet. When I called to see her on the following day, I was told that "there was something very strange the matter with her, for that she was running round and round until she became giddy and could hardly stand." They had placed her in the cowhouse and fastened her up. I ordered her to be brought out. There was a peculiar staggering in her walk, and her vision was evidently impaired; the head was projected, yet held a little on one side; and she was no sooner set at liberty than she began to describe circle after circle. I saw nothing of the giddiness which had been described to me, but she made me giddy by looking at her.

Difficulties of the Case.—It was a new case to me. I thought that I had found, what I had occasionally heard of, an instance of hydatid in the brain of horned cattle. I pondered for awhile what to do. Nothing could indicate to me the situation of the

hydatid, farther than the holding of the head in the uniform direction from left to right in which she pursued her course. Supposing that the inner plate of the cranium might become softened, the frontal sinuses were interposed extending from the nasal bone to the foramen magnum, and the external plate would remain sound. Had she been in somewhat better plight, I am afraid that I should have at once consigned her to the butcher.

I then reflected, that although these symptoms, this holding of the head on one side, and this circular motion, were the effect of pressure on a particular part of the brain, and in the sheep were produced by an hydatid, yet that effusion between the membranes, spreading over only a small surface, or the rupture of some minute vessel, might produce the same effect, and might possibly be doing so here: I determined therefore to give her a chance, and I bled her again freely, and from the left jugular, as the mischief, whatever it was, seemed to be on the left side; and I gave her another and a stronger dose of physic, and I had the pleasure of seeing her considerably relieved, and in less than a week she was perfectly well.

French Accounts of the same Affection.—A twelvemonth afterwards I was gratified at meeting with a report of four cases of a similar kind in the Recueil de Médécine Vétérinaire, by Professor Gellé, of Toulouse. The symptoms suddenly appeared: the appetite was diminished; rumination ceased; the fæces were voided in small quantities, and hard; the urine was thick, and the mouth was hot. The ox turned frequently, and constantly in one direction, and while he was turning he endeavoured to crop a few blades of grass. The conjunctiva was injected and red; a mucous discharge flowed plentifully from the nose; and the pulse was accelerated and hard. The horns and ears were hot; the hide adherent; and there was great tenderness over the region of the loins. M. Gellé considered it to be a slight cerebral inflammation: he bled; administered mucilaginous drinks, with Glauber's salts, and put the animals on spare diet,—and in the course of four or five days the beasts were perfectly recovered.

You will not therefore consider this turning as necessarily indicating the existence of an hydatid in the brain of cattle; but will rather attribute it to some temporary and local effusion or pressure, which bleeding and physicking and starvation may possibly remove.

Hydatids have been found in the Brains of Cattle.—Cases, however, have occurred in which a disease marked by this peculiarity of turning has actually been produced by the existence of hydatids in the brain of cattle. Bartholin relates, that in 1661 a great many beasts perished from a species of frenzy, and

that, when they were examined, *vesicular worms* were found in the substance of the brain.

Curious Application of Percussion.—Wepfer speaks of an operation for the turnsick which he saw performed on some Swiss cattle. When this circular walk was observed, the beast was caught, and was struck with a hammer about the head and behind the horns; and the operator judged, by the shrinking of the animal, in what place there was a vacuum, and there he made an opening into the skull. This certainly does not coincide with the anatomy of the present day. We have seen that between the two plates of the cranium there is a continuous hollow from the nasal bone almost to the tip of the horn, and again posteriorly to the very edge of the foramen magnum. We, too, should have suspected disease where the animal shrunk from the blow; but we should have predicated a collection of matter there, from inflammation of the lining membrane of the frontal sinus, and, by some adventitious texture, confined to a particular spot. I have spoken of this when describing the frontal sinuses, and inflammation of their lining membrane. Beneath the inner plate of the skull there is no vacuum as here described, but a watery cyst occupies the situation of the pulpy matter of the brain. How this was to produce the sensation demonstrated by percussion I am yet to learn.

The Existence of the Hydatid may be ascertained in young Beasts by the Softening of the Skull at the Root of the Horn.—Wepfer very properly remarks, that the frontal sinuses are not fully developed in young beasts, and that the situation of the hydatid may frequently be detected in them, in the same manner as in sheep, by the softening of the cranial roof at some particular spot. This indeed would be decisive: but he speaks of an operation which he performed where he had not this guide, and depended on the pain caused by percussion; for he operated below the horn, and on the parietal bone, and through a mass of muscles,—and he operated successfully.

Further Proofs of Hydatids in the Brain of Cattle.—The writer of a paper read before the Medical Society of Toulouse, describes a person who had operated on cattle twelve times for the extraction of the hydatid, and eight times out of the twelve with perfect success; and the same gentleman exhibited to the society two hydatids which he had extracted from the brain of a heifer eighteen months old. Our records, disgracefully scanty, confined in a manner to a periodical only seven years old, contain no history of turnsick in cattle; but I have seen, as I have already mentioned, one case of it: I have heard of others; and from the very frequent success which has attended prompt and

decisive practice, I am disposed to attribute it to partial compression of the brain from some other cause.

Turnsick in the Dog.—I turn, however, to another of our patients, and there I have more frequent illustration of the effect of this partial pressure. A dog is listless, dull, and off his food, for two or three days; then an apparent stupidity creeps upon him; he scarcely recognizes any surrounding object; he has no fit, but he commences this roundabout way of rambling. He forms comparatively larger circles than the ox; the area of the room alone bounds his wanderings, and often, for hours together, he will describe these circles, and always the same direction, and generally with his head on one side. At first he will carefully avoid the obstacles in his way; but by degrees his sense of vision becomes lost, and his mental faculties impaired, and then he blunders against everything.

This Complaint uniformly fatal.—I have resorted to every remedial measure which the case could suggest. I have bled, and physicked, and setoned, and blistered, and used the moxa, but all without avail, for in not a single case have I been successful. You may suppose that I have lost no opportunity of post-mortem examination. In some cases I have found spiculæ projecting from the inner plate of the skull, and pressing upon, and even penetrating, the dura mater. I know not why the dog should be more subject to these irregularities of cranial surface than any of our other patients, but decidedly he is so; and where these irregularities have pressed, there has always been injection of the membranes, and sometimes effusion between them. At other times I have found effusion without this external pressure; occasionally, distention of the lateral ventricles by serous fluid; and, in some cases, but comparatively few, there has not been any perceptible lesion: in no instance, however, have I met with an hydatid or any thing that could possibly be mistaken for one.

Singular Instance of Compression on the Brain of the Horse.—There is no well-authenticated account of the existence of an hydatid in the cranial cavity of the horse; but cysts containing a fluid, sometimes serous and pellucid, at other times of a yellow colour and a viscid character, have occasionally been found, and they have produced many of the symptoms that I have just described. The most satisfactory one that I know is recorded in the *Journal Théorique et Pratique* for July, in the last year. It was communicated by M. Leloir. A horse was wounded by a bullet in the superior part of the shoulder, six inches below the withers. He was taken to the infirmary at Alfort, and cured; but in the spring of 1815, 1816, and 1817, there appeared, a little below the cicatrix, a small tumour which suppurated, burst, and

healed of its own accord. In April 1818, however, instead of the tumour, the horse exhibited symptoms of intense vertigo, which disappeared in eight days, after copious bleeding and purgatives, and the local application of cold. In April 1819, he was again attacked with vertigo, and exhibited the following symptoms:—he carried his head low, and always inclined to the right side; he staggered as he walked, and the motion of his limbs was marked by a peculiar convulsive action, confined, however, to the fore extremities: he moved by a succession of spasmodic boundings; he was completely deaf, and rapidly lost flesh, although he ate and drank voraciously.

He remained in this state until the month of November, when all the symptoms, except the deafness, sensibly diminished; and so he continued until the 3d of January, 1820, when he experienced a fresh attack of vertigo, and died suddenly. On examination after death, the following lesions presented themselves. The dura mater and arachnoid membrane were red over the whole of the superior and anterior portion of the brain. On the *septum medium* (called by our writers the septum lucidum), and towards the posterior part of it, was a round cyst fixed between the two cerebral lobes. It was about the size of a pullet's egg; its parietes were thickened, and of a fibrous character, and it contained a homogeneous, yellow, viscid fluid. It adhered by its anterior portion to the septum medium, and by its superior part to the ridge of the parietal bone; and it was attached to both by dense and compact tissue. The ventricles were filled with serous fluid, and the plexus choroides were injected and of a violet colour.

Turnsick in the Human Being.—I have heard of affections of the brain in the human being, in which there has been a peculiar uncertainty of gait and tendency to this circular motion, and in which, when the patient sat up, he described with his head, yet very imperfectly, these rotatory movements, and always the same way, and with the head inclined, and sometimes permanently, to one side. I have understood that this has been attributed to partial local pressure on the brain, but I have read of only one case in which the hydatid was the apparent cause of these singular phenomena. I am, however, far too ignorant on this subject, as it regards my own patients, to be warranted in hazarding a conjecture respecting any similar malady in the biped.

ON WOUNDS PENETRATING INTO THE CHEST OF THE HORSE.

EXPERIMENTS MADE WITH A VIEW TO ILLUSTRATE THEIR CONSEQUENCES AND THE PROPER TREATMENT OF THEM.

By MM. U. Leblanc, *V.S.*, *and* A. Trosseau, *M.D.*

The opinions of medical men with regard to wounds penetrating into the chest have been so discordant, and veterinary authors have said so little on this division of surgery, that we have thought it our duty to institute some experiments in order to facilitate the study of these lesions, and to determine the best curative treatment of them. All our experiments have been made upon the horse. We have preferred him because, on account of his docility, we have been able to operate on him with the accuracy we could wish, and because he did not, like other animals, attempt to rid himself of the bandages which we put upon him.

We inflicted the wounds with different instruments. In each series of experiments we varied the form of the wound, and we used vulneraries differently composed, and applied in different ways. We thus arranged the course of our experiments:—

1. *Simple wounds penetrating the parietes of the thorax, but without the introduction of air into the pleural cavities.*

If we had not wished to render our inquiries as complete as possible, we should have dispensed with experimenting on this variety of penetrating wounds, for it is easy to see that they could not be attended with any danger. These wounds are rarely met with in practice, and without great care is used it is difficult to make them without lacerating the pulmonary tissue. In order to pierce the parietes of the thorax without wounding the lung, we made at first an incision with a bistoury, reaching to the pleura, and then we divided that membrane with a probe, to which we gave an oblique direction, that it might glide over the lung without wounding that viscus. But, whatever precaution we took, we could never make a wound as simple as we desired. There was always some exposure of the pleura. The probe having once entered the chest, we withdrew it as speedily as we could, taking care to keep the two edges of the incision through the skin as close together as possible, in order to prevent the entrance of the air. We finished the experiment by closing the wound by the hare-lip suture. We repeated this experiment several times on the same horse without observing the slightest derangement in the function of respiration. The wounds healed very quickly, and almost always by the first intention.

2. *Simple wounds through the parietes of the thorax, with the introduction of air for a few seconds.*

We effected these wounds with a bistoury, cutting at once through the wall of the chest, until we arrived at the pleura, which we divided with caution: we held open the edges of the wound with a flat piece of iron, and let the air enter during some seconds; and we then closed the wound with the same suture as in the last case. We have never seen any serious consequences from this species of wound. The respiration of some horses was not at all disturbed; others, who were more irritable, heaved at the flanks for a few instants; but that was, perhaps, as much to be traced to the pain of the operation as to any introduction of air into the chest.

3. *Simple wounds, with the introduction of air into the chest during several minutes, and even during some hours.*

The introduction of air into the chest for any considerable time has always been followed by symptoms more or less manifest, but these varied according to the manner in which the experiment was made, and the circumstances in which the horse was placed. The wound was effected in the middle of the space between the third and fourth false ribs. The incision was three centimetres long (somewhat more than an inch) externally, and from one to two centimetres (one-third to two-thirds of an inch) internally, and a current of air was established between the external atmosphere and the cavity of the chest by introducing a canula, a centimetre (almost two-fifths of an inch) in diameter through the pleura into the chest, and which was plunged in a direction from above downwards.

Soon after the introduction of the canula, the respiratory movements became accelerated, and, not long after that, the nostrils were dilated. The respiratory murmur could no longer be heard, but, on the contrary, and very distinctly, a sound produced by the friction of the lung against the air introduced into the pleural sac, and especially when we closed the aperture of the canula. The chest resounded loudly on percussion. These symptoms increased in proportion to the length of time that the air had access to the interior of the chest.

As the result of various experiments, we ascertained that, after one minute, respiration was simply accelerated; after five minutes, the nostrils were dilated, and the edges of the nostrils curled. Generally the animal coughed hardly and frequently. After ten minutes, the flanks began to be considerably agitated, with a violent and prolonged contraction of the abdominal muscles; a peculiar sound was heard at the nostrils, which might be called nasal breathing (*souffle nasal*), because it resembled the difficult

respiration which is produced by any substance obstructing the cavities of the nose.

An hour after the opening of the chest, and the aperture of the canula having been closed for half an hour, the movements of the flanks were very much quickened, and consequently shortened in their duration, and there could be heard in the respiratory passages two distinct sounds, the one in the trachea, which commenced when the flanks began to sink, and the other in the nostrils, when the respiration was finished. These sounds had much resemblance to each other, and may be designated by the names, whizzing rattle, loud and dry (*rale sifflant, gros et sec*). It much resembled the sound of a pair of bellows.

The horses, the cavity of whose chest remained in communication with the external air only one or two minutes, survived; the agitation of the flanks gradually diminished; and ordinarily, after three days, the functions of respiration were re-established in their natural state. The disturbance of the respiratory functions had little or no influence on the organs of digestion, or, at least, the horses retained their usual appetite.

It was not so when the communication between the cavity of the chest and the external air was long kept open; for if this continued during half an hour, the horse rarely survived.

We will cite a case in proof of what we have stated.

On September 23d, 1829, at half past three o'clock, P.M., we submitted a mare, in fair condition, to the following experiment. Before the operation the respiratory sound was natural; a communication between the external air and the cavity of the chest was then made in the way already described.

Immediately after the introduction of the canula the respiration became much accelerated, and the mare coughed several times.

At forty minutes past three the respiration was still quicker, and exceedingly difficult. The respiratory murmur of the lungs had nearly ceased, but there was a very distinct sound produced by the friction of the lungs against the admitted air, and increased when we closed the canula. The resonance of the chest continued or was increased whenever percussion could be applied. The *souffle nasal* was very loud.

At four o'clock we withdrew the canula.

At a quarter past four the movements of the flanks were exceedingly quick, and consequently short: we could hear a considerable and loud whizzing, first in the trachea when the flanks began to fall, and then in the nostrils, when the expiration was completed.

At eight at night the inspiration was short and painful; the expiration prolonged, and also very painful: the whole body was shaken by the contraction of the respiratory muscles; the anus partook of the same movement, it retracted and protruded according as the flanks fell or rose. We heard no more the vesicular sound, nor any pulmonary one, but only that produced by the friction of a mass of spume between the lungs and the ribs. The mare refused to eat.

24th, 7 A.M.—The respiratory movements very quick, and executed by jerks like the bellows of a forge; resonance over the whole of the chest; the nostrils dilated and curled beyond measure; the meeting of the air in the trachea and the nostrils produced always two successive sounds; a *spumous* sound is heard in the chest, and a whizzing one in the bronchi. The mare fell on her litter at eight o'clock in the evening, and died at midnight.

25th, 11 A.M. *Post-mortem examination.*—Injection of the sub-pleural vessels of the pericardium, the mediastinum, and the diaphragm. Injection of the sub-pleural vessels of that part of the membrane which surrounded the wound, and for the space of about ten or twelve centimetres (4 or $4\frac{1}{2}$ inches). The pleural cavity filled with spume, and in the lower part of it five or six pounds of turbid serosity, of a pale grey colour, and which had the appearance of pus mixed with water. False membranes, enclosing globules of air, existed in great numbers on several points of the pulmonary pleura, and particularly about the part which corresponded with the opening into the thoracic cavity. These false membranes covered a pulmonary tissue, dense, red, and the interlobulary portion of which was infiltrated; in fact, pneumonia existed in that part of the lung. The sub-pleural tissue was infiltrated and injected, and, already, the external surface of the pleura was slightly rugous and pointed: there were little eminences corresponding with the reddened surfaces of the false membrane. This partial inflammation of the lung was probably produced more by the friction of the canula against its tissue* than by the action of the air, since it was only at the part which corresponded with the canula that this lesion was observed, while the air was in contact with the whole of the pleural surface: besides, in other experiments in which we did not use the canula, the lesions which we have now described were not observed.

* This friction was very great, in consequence of the continual changes in the relation of different parts of the pulmonary and costal pleuræ with each other. They could be easily appreciated by introducing the finger for a few instants into the orifice.

The lungs were collapsed, condensed, and contained a great quantity of blood of a deep black colour, which reddened when it had been exposed to the air a little while. The bronchi were filled with liquid spume.

The other horses which died after the same kind of experiment lived longer than this mare. The lesions which were found after death were similar to those here described; but we have selected the mare, in order to prove the fatal effect of the introduction of air into the chest, even when there is no effusion of blood. The presence of air alone can effect a great alteration in the pleural serosity, as we have proved by numerous experiments. In this case the natural fluid of the pleural cavity becomes thickened, grey, decomposed, and, in a word, it undergoes the same change as if it had been exposed in a vase to the free action of atmospheric air. Thus the presence of air in the chest, and especially when continued for a certain time, is dangerous, not only from the physical action of the air, but from the alteration which it produces in the serosity of the pleuræ whether directly or indirectly.

4. *Simple wounds in the walls of the thorax, with bleeding from an intercostal artery, and the effusion of blood in the pleural cavity, but without the introduction of air into the chest.*

All the conditions which this experiment, strictly conducted, would exact could not be fulfilled, for it is impossible to find out an intercostal artery, and divide it, and direct the jet of blood into the chest without a certain quantity of air introducing itself with the blood into the pleural cavity: nevertheless, by using a great deal of caution, we may prevent the admission of a quantity sufficient to disturb the respiratory function in any considerable degree. In order to attain this object, we first discover an intercostal artery, and we lay it bare, and dissect it from its attachments for a length of about six or eight centimetres ($2\frac{1}{2}$ or 3 inches). We then tie the superior part of it, and having cut it at the inferior part, we search for the pleura; we puncture it, and introduce the free extremity of the artery into the opening, taking care to place our thumb upon the wound as soon as we have turned the artery into the chest, in order to prevent the air from penetrating into the pleural sac. This precaution, which does not perhaps absolutely exclude all air, yet gives passage to so little a quantity, that the result of the experiment is not at all interfered with.

As soon as the artery is introduced into the chest, we loosen the ligature which compressed it superiorly, and suffer the blood to run into the chest. We then tighten the ligature anew, withdraw it from the chest, and pass a suture, *a bourdonnets* (a small

pledget being placed between the lips of the wound, to prevent the immediate healing of it), through the edges of the wound, taking all possible precaution during these manipulations to avoid the introduction of air into the pleural cavity.

We have repeated this experiment three times, varying it with reference to the quantity of blood introduced into the pectoral cavity. It was impossible for us to measure exactly the quantity of blood, but in the three experiments, conducted with the greatest care, we calculated that there was *un demi-litre, un litre, un litre et demi* (a little more than one, two, or three pounds).

Immediately after this experiment, which was always made on a horse previously cast, the movements of the flanks began to be quick and irregular; the inspiration was prolonged, and the succeeding expiration was performed with a kind of jerk. The intensity of these symptoms was in proportion to the quantity of air introduced. The horse that was the subject of the last experiment, and into whose chest three pounds of blood were introduced, had a shivering fit, which lasted half an hour, but which did not prevent him from eating one or two pounds of hay which he found in his rack. The other horses retained their appetite from the time of the operation until they were destroyed.

In the three experiments, on having recourse to auscultation, we heard a sound which we may denominate spumous, and which was referrible to the pleural cavities; but this sound soon disappeared, and on the second day we heard no more of it. It was certainly to be attributed to a small quantity of air which found its way into the chest when the pleura was punctured. Afterwards when, without doubt, the air was absorbed, we heard the respiratory murmur distinctly at the superior part of the chest, and less so at the inferior part.

Each of these horses was suffered to live six days after the operation. During the whole of that time, the vesicular sound could not be heard distinctly at the inferior part of either of the sides of the chest, although the introduction of the blood took place on the left side alone. The irregularity of the beating of the flanks diminished in proportion to the time from the performance of the experiment; and towards the end of the sixth day the only perceptible symptom was, a forcible contraction of the respiratory muscles, both in inspiration and expiration, and which also took a longer time for the complete performance of them.

At the opening of these horses, which was effected immediately after their death, we found the following appearances:—

First horse:—A bloody serosity in the pleural cavities, and

more in the left than in the right; the injection had been absorbed in the space of these six days. The wound in the parietes of the chest had nothing remarkable in its appearance. The opening of the pleura was closed by a fibrinous clot, already considerably organized.

Second horse:—About two pounds of fluid in the chest, of a mahogany colour, more in the left cavity than in the right; no trace of pneumonia nor of pleurisy, except about the wound; but this lesion was independent of the sanguineous effusion in the chest, and was, as in all the other experiments, the effect of the operation which preceded the puncture of the pleura.

Third horse:—In the inferior part of the left pleural cavity was a mass, evidently part of the effused blood, and which had not yet been entirely absorbed. There was no trace of any fibrinous clot, nor of false membrane, otherwise than at the immediate neighbourhood of the wound, where was the commencement of pleurisy. The surface of the bloody mass, of which we have spoken, was covered by a very thin kind of pellicle, almost transparent, and the greater part of which could be raised without tearing it: the rest of it was not unlike the cruoric clot of a mass of blood which had been kept with the serum in a vessel after bleeding. Besides this mass of blood, altered to a certain degree, there were four pounds of serous fluid, of a deep red colour, in the chest.

It is probable that, if the death of these two horses had been deferred a little longer, there would not have been any trace of the injected blood, as was, indeed, the case in the first horse, into whose chest a less quantity of blood had been thrown. Other experiments have confirmed us in that opinion; for we have often opened horses after there had been, without shadow of doubt, effusion of blood as the consequence of wounds more or less extended and deep, and we have never found any trace of blood when the examination has taken place a considerable time after the infliction of the wound, as fifteen days, three weeks, and a month. On the contrary, when the wounded animals were opened immediately, or a short time after they had received the injury, we found a mass of blood, in a somewhat solid state, disposed in the form of a clot, of which the superior portion, supposing the animal was standing, was of a lighter colour than the inferior one. We will return to this important subject, the study of these bloody effusions.

Journal de Méd. Vét., April and May 1834.

[To be continued.]

BRONCHITIS IN CALVES.

By Mr. MEYER, *V.S., Newcastle-under-Line.*

I HAVE lately met with this sadly fatal disease in several calves belonging to a neighbouring farmer. He had lost five before he consulted me; a sixth, which was nearly dead, I sent to my establishment, and thus had an opportunity of examining it soon after death.

The disease is accompanied by, or seems to be entirely dependent on, the existence of worms in the bronchial tubes and air-passages into the lungs. I have sent you some specimens of them. They belong to the *strongylus* species, and are one of the divisions of the *filaria*. They are from an inch and a half to three inches in length, and, when viewed through a microscope, resemble so many silver eels. The disease, from its very peculiar nature, must almost invariably be fatal.

The first symptoms which present themselves are a peculiar hoozing or dry husky cough. The animal soon begins to droop and lose flesh; and, as the disease advances, the breathing is sadly quickened, accompanied by an evident sense of oppression about the chest and a grunting noise, and the pulse beats one hundred times in a minute. The appetite is not much affected; rumination continues, and the bowels are regular throughout the whole period of the disease. The discharge from the nose is of a mucous and not a purulent character.

The animal sometimes lingers from three to five weeks, the symptoms becoming more and more aggravated—the countenance anxious and distressed—the ears drooping—the eyes sunk in their orbits—the nostrils distended for air—the breathing more and more rapid, accompanied by this grunting distressing noise, and the beast is constantly restless: the emaciation and debility are extreme; and, at length, the poor beast terminates its career from exhaustion and suffocation—the bronchial tubes, even to their minutest ramifications, being completely plugged up with knots of worms imbedded in mucus. It is a remarkable circumstance, and deserving of attention, that the appetite continues good and the bowels regular to the very end of the case.

Upon laying open the whole extent of the trachea or bronchial tubes, I found the lining membrane much less inflamed than could have possibly been expected. The inflammation was greater, however, in the bronchi than in the superior air passages.

A great quantity of worms occupied the larynx and fauces;

but this may partly be accounted for from the head and neck, after death, lying lower than the body, and thus some of the worms gradually gravitating down; yet the bronchial tubes seemed to be completely plugged up. The posterior and superior part of the lungs possessed much of their external natural colour; but, anteriorly, they were much inflamed. When cut into, the substance of the lungs seemed to be thickened and indurated anteriorly: posteriorly and superiorly it had more of its natural structure, but was studded with red, vascular, and indurated patches, giving it a variegated appearance.

The abdominal viscera and the interior of the intestines were free from worms. The mesenteric glands were not enlarged.

As the summer has been very dry, and the water of which the cattle drink in our neighbourhood is mostly stagnant, I consider the calves to have taken the ova up in drinking, and which passed into the circulation, and were arrested in their progress in the place where nature designed them to be brought to maturity.

Since the calf died from which these worms were taken, I have had another placed under my care, upon which I performed the operation of tracheotomy. I then passed a whalebone probang through the wound up the trachea as far as the larynx, but I could not reach any worms, nor was I more successful in passing it down to the commencement of the bronchial tubes; but the animal received great and immediate relief from the operation. From being much emaciated, and breathing very quickly and laboriously, and the countenance expressing oppression and distress, it became more lively—its breathing was slower and quieter—it gained flesh; and although, the wound now closing, it is not quite so well as it was, yet it is in a far better state than before the operation.

I consider this operation a failure as to its enabling me to extract the worms, but it is certainly highly useful in affording so much relief.

I am trying the effect of Indian pink, combined with saline medicines; at the same time compelling the animal to inhale the vapour arising from melted tar and turpentine. I can say nothing of the ultimate effect of this mode of treatment at present, but it certainly has relieved the urgent symptoms.

I shall feel obliged by your inserting this letter in THE VETERINARIAN, in order that the attention of practitioners may be brought so to bear upon this subject that some efficient mode of cure or of relief may be suggested. Clater, and some other writers, describe a mode of treatment which I should consider would aggravate rather than cure the disease, even if adopted, as

they recommend, in the earliest stage of it*. I am very much inclined to consider the cures that are said to have been effected as those of common cold, and not of this peculiar malady.

THE ROT (LA CACHEXIE AQUEUSE) IN SHEEP, AS OBSERVED IN EGYPT.

By M. HAMONT, *Founder and Director of the Veterinary School of Abou-Zabel.*

[Continued from p. 546.]

IN animals affected with the rot, the blood is sometimes decomposed to such a degree that it scarcely stains the linen on which it falls. The fluids are part of the organization of an animal; the blood is the source of nutrition; the solids are formed from the fluids: it is contrary to physiology to refuse them a part in the production of disease. Professor Fœdoré places the very essence of scurvy in an alteration and separation of the constituent principles of the blood. Dr. Leuret was the first to demonstrate that the blood of a horse labouring under malignant fever, and transfused into the veins of a healthy horse, would produce the same disease; and malignant fever, once produced, often developes itself, and runs its course in a very short period of time.

The blood of the horse during the spring is more watery, and contains more serum than when the food is of a drier kind. The researches of our estimable colleague, M. Figari, have abundantly proved this. The diarrhœa of sheep, and tubercles in the liver, cannot be always or generally considered as the result of inflammation. Diarrhœa may exist without inflammation, and from mere debility of the digestive apparatus. When we give rabbits green and moist food, diarrhœa ensues, and it ceases when the food is changed. Tuberculous affections are sometimes produced without the influence of irritating causes. It is beyond doubt that they occasionally develope themselves without pre-

* In the early editions, Clater recommends the following jumble of dangerous ingredients: "Take wormwood and savin (!) of each two ounces (!!); Indian pink, half an ounce; cut or bruise them small, and put them into a pitcher; then pour a quart of boiling water upon the ingredients, cover them down, and let them stand in a warm place till next morning; then strain the liquor through a cloth, and add to it, ginger in powder half an an ounce, aniseeds fresh powdered two ounces, linseed oil two tablespoonsful. Mix, and give it new milk warm. The above drink is calculated for a calf of the age of three months (!!), and from that to six or eight months. In a later edition, however, he tells another and a better story.

vious inflammation. Less than any other animal, the sheep is disposed to inflammation; nevertheless, we often find a great number of tubercles in its viscera. Lymphatic subjects are oftener attacked by them than the sanguineous or the nervous. These morbid productions have been found even in the fœtus; they arise, and they increase in organs essential to life without any indication of their presence. We often see them situated in the very thickest substance of the lungs without any trace of inflammation in the surrounding tissues. Magendie produced them at pleasure in the guinea-pig by unwholesome food. Contrary to the established principle that tubercles are the effect of inflammation, some have said that these morbid productions, so common in cold and wet countries, are rarely seen in warmer climates, or where the animals perspire freely.

Observation has shewn the fallacy of the commonly received opinion. In Egypt, at Cairo, at Abou-Zabel, the temperature is elevated; but the animals are generally subject to tubercles. It is natural, then, to look out for other agents which may contribute to the formation of the bodies of which we are speaking. We have traced the development of tubercles in the liver and heart of mangy pigs: we have first seen round hydatids filled with a limpid fluid; afterwards cysts, compressed and empty: in another place vesicles containing a caseous substance, and, by their side, little pouches filled with a hardened gritty matter.

Reiterated facts observed by us, both in Egypt and in France, and numerous comparisons of morbid productions, have led us to the following conclusions, that tubercles are found in warm climates as well as in cold and damp ones; that irritation is not the sole cause of their production; and that the kind of food has much to do in the formation of these substances.

Veterinary authors have differed much in their opinion as to the seat of rot: Chabert has placed it in the fluids—Morteau considered it to be a verminous disease—Heurant-Lamerville describes it as a dissolution of the blood, an alteration of the fluids generally—and M. Hurtrel d'Arboval, as we have said, believes it to be a symptom of phlegmonous inflammation of the digestive passages.

It seems to us to be perfectly demonstrated by the history which we have given of it, that the rot in sheep is an essential or primary disease—a true *metatrophy;* and consisting of a decomposition of the blood, caused by vegetable substances deprived of their nutritive juices.

We recommend to all veterinarians the study of the article on the Rot *(Pourriture)*, by M. d'Arboval, in the 3d vol. of his Dictionary. They will find a succinct, very concise exposé of

his theory of the sympathies by which the viscera are connected together. Thanks to the amateur veterinarian! Without him, miserable pupils of our schools! you would not have emerged from the profound mire in which your masters, Chabert, and Huzard, and Dupuy, and Girard had plunged you!! What conciseness! what logic!

Inflammatory appearances are wanting, or rather appear to be so; "but because they are obscure, they are not the less valuable indices in revealing the nature of the malady." Do you understand, reader?

"A serous fluid cannot accumulate without an organic modification, which will increase the exhalent function of the tissue; and that modification cannot be any thing else than the effect of irritation." Certainly, unless he be a metaphysician, it is impossible for any one to think otherwise.

The serous fluids in the great splanchnic cavities come from the serous membranes. M. Hurtrel D'Arboval says the same. Then it would seem natural for him to place the original seat of rot in the pleura or the peritoneum, &c. Not at all—listen! "The inflammation, the symptoms of which are so fugitive, did not affect the serous membranes primarily; it was only by the power of sympathy that it reached them, and, afterwards, the cellular tissue. The primitive inflammation was one of the mucous membrane of the gastro-intestinal canal. It had afterwards a sympathetic reaction on the liver, then on the viscera enveloped by serous membranes, and at length on the serous membranes themselves."

Messieurs officers of cavalry! proprietors! farmers! cultivators! remember well what this writer, who has dedicated to you his book, is saying to you; but do not ask any improper question!! If, in the living animal, or in the opening of the dead one, you do not meet with these marks of inflammation which this eloquent and most learned physiologist describes, the inflammation does not, on that account, the less exist—the author assures you that it does exist, and that is quite sufficient.

If M. Huzard could have known the doctrine of which M. Hurtrel has constituted himself the champion, he would not have committed the sad fault of ranking the rot among the number of asthenic diseases.

"Debility is the consequence of inflammation rapidly become chronic." You did not know that there was inflammation—you went blunderingly to work; M. d'Arboval is a much cleverer person—he perceived it, without there being any thing to indicate its existence. We shall see, by and by, how he cures this inflammation in his rotted sheep.

The cause of an evil being known, it is generally easy to prevent it. We will not repeat that which has been prescribed by former veterinary surgeons. In France every man enjoys the fruit of his labour; societies of learned men distribute prizes and other encouragements to well-informed and industrious cultivators; and every day they encroach on the domain which had been enslaved by prejudice and old routine. The more industrious a man becomes, the more he gains in consideration and fortune: he becomes interested in the health and improvement of his flock, which are his patrimony, his riches. A disease breaks out among them; he consults those who are skilled in these matters, and his interest prompts him to follow punctually their advice. It is not so in Egypt. The rot appears on the banks of the Nile, and the inhabitants are indifferent to the progress of the pest; they know well the cause of it, but they attempt not to combat it. Their sheep and their wool belong not to them. Why should they occupy themselves with the amelioration of their flock, or endeavour to preserve them in health?

The Bedouins alone care about their cattle and sheep. A great many of them inhabit the borders of the country near the desert. When the Nile returns to its bed, their sheep also go to feed on the *dyssa* of which I have spoken. The disease is not slow in attacking these useful animals. The first symptoms of it appear. The vigilant Bedouins lose not a moment: they reassemble their flocks, and drive them back to the desert. In the midst of the sands their principal food is the salt-wort, or kali. After some days, the symptoms of the rot gradually disappear, and the sheep regain their former health. Such is the preservative, curative treatment of the Bedouin shepherds; and they know not any other. If the disease is more advanced, this simple mode of treatment, probably, is not sufficient. The Bedouins themselves acknowledge it, and immediately destroy the animal.

Chabert recommends juniper berries, aromatic decoctions, sulphate of iron, sal-ammoniac, camphor, and brandy. These means are good, but only at the very commencement of the disease; and many a time we have prescribed the administration of these substances without the slightest beneficial effect, and especially when the sheep had long been ill.

Let us consult M. d'Arboval, page 666. "We do not think that every disease should be combatted by the abstraction of blood; and, in this case, the most notable exception we have to make to the system of bleeding, is one of the varieties of gastro-enteritis, susceptible of so little intensity of inflammation, that it has even escaped all observers," except M. Hurtrel d'Ar-

boval, supereminently skilful! "Bleeding will be even more out of place when applied to an animal that does not appear to have vital energy sufficient to contract an inflammatory affection of much intensity—an animal whom the least circumstance drives to atony."

See here our author quite at a stand!

Physiological physician! tell us, if you please, what you mean by atony! Is it not rather the effect of internal inflammation? You have made an inflammation spread itself from the mucous membranes of the intestines, and through the liver and the spleen, as far as the serous membranes, where it has fixed its last abode, in order to cause a serous fluid to be effused in the splanchnic cavities. You have condemned as heretics those who have dared to pronounce the word "asthenic." What will the farmers, the cultivators, and more especially the cavalry officers say? But, without subterfuge! where the malady is inflammatory, as you have gravely announced it to be, and when the antiphlogistic treatment is, without exception, the only one that is effectual, then, abjuring your former principles, admit with us these alterations of the blood which you yourself have seen in the dead bodies of cachectic animals.

Let us hope that in his next edition M. Hurtrel d'Arboval will be more clear; a better logician, and less of a physiologist.

The administration of soup, as recommended by Professor Dupuy, was successful in the Delta on a dozen sheep that had been ill eight days. All these animals had diarrhœa, the belly distended, and a little œdematous enlargement under the throat. The proprietor, who had long been known to us, wished us, for his satisfaction, to follow his directions. A soup was made with the carcasses of dead sheep, and each of those that had the rot drank from a pound to two pounds of it every four-and-twenty hours. In ten days the cure was complete. We were far from being always so successful; on the contrary, we failed in the majority of cases; but we had then as our patients, sheep which the fellahs were about to slaughter.

In the interior of the provinces of Lower Egypt we never had opportunity to treat the disease in its advanced stages; for the Bedouins, as has been already said, cured their rotted sheep by transporting them into the midst of the sands.

The rot, then, causes a dissolution of the blood, and this is produced by unwholesome food and watery plants. To remove the cause is the first natural indication of cure. Afterwards, it is necessary to supply the sheep with substances really nutritive, mingled with salt, and contained in as small a compass as possible; and, in a still later stage, soups of animal food, or of

wholesome vegetables, slices of bread, or bread moistened with salt water, are very acceptable to the sick animals, and produce decidedly good effect.

When effusion has taken place in the splanchnic cavities, and the blood has lost all its natural properties, the disease is incurable.

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SCARLATINA IN HORSES.

By Mr. W. Percivall.

Though introducing a new name, I may, perhaps, not be introducing many of the readers of The Veterinarian to a disease they have not seen; however, it is one that does but rarely occur, and one concerning which our schools and authors have, I believe, hitherto maintained silence. I venture to christen it *Scarlatina*, and for the reason that, in its leading characters, it bears more resemblance to that disorder than any other with which I can compare it, and because it seems to me to answer nearly or quite as well to that appellation as the disease (in man) does, which is properly so called.

This affection is commonly ushered in by symptoms of catarrh; for which, indeed, it might be mistaken were these not in a day or two succeeded by the appearance of numerous scarlet blotches upon the membrane lining the nose, possessing the hue of arterial blood, irregular in size and figure, and visible as high up as the membrane can be inspected. These appearances mostly assume the character of *petechiæ;* though I have seen them running in streaks. They look just like so many patches of extravasated blood; but if one of them be wounded, blood instantly trickles down the nose, and assures us that, partially and singularly distributed as it is, it is still fluid, and still contained within its vessels. In passing our finger over the red spots, nothing like pimple or pustular elevation of surface is discoverable. The skin is everywhere similarly bespotted; at least I infer so from the results of my examination of the body of a horse that died of the disorder, whose case I shall annex to this account. A mucous discharge continues from the nose. Anasarca is a common attendant: the legs, the sheath, and even the belly, are occasionally much tumefied. The respiration is quickened; but rather indicates pain than embarrassment. The pulse is also accelerated, and beats with force. There exists great disinclination to move about. The appetite is either wholly lost or very much impaired.

Treatment.—In two cases, early venesection, followed up by the exhibition of brisk purgative and diuretic medicine, with frequent walking exercise, proved completely successful. One case occurred, however, which had a fatal termination, though I was afterwards induced to attribute the circumstance, in some measure, to excess of walking exercise, which was given with the intention of keeping down the anasarca: this is the case I shall relate.

A brown colt, the property of Sir A. F., who had undergone the operation of castration six or eight months before, was admitted into the hospital with a catarrhal flux from the nose, and the Schneiderian membrane everywhere covered with scarlet spots, looking like so many small patches of extravasated blood. The lips were prodigiously tumefied, and had the same tuberculated chorded feel that farcy would give them. The submaxillary glands on both sides much enlarged, as well as the lymphatic glands of the breast and thighs. No anasarca: the legs perfectly fine. Respiration augmented. Pulse 100. No appetite. Indisposition to move; and much apparent inability to do so in the hind quarters. Bloodletting, purges, and diuretics, were prescribed, and exercise enforced; but all to no purpose.

Post-mortem examination.—The lungs and other viscera in a healthy condition. The skin, from the parts from which it was stripped, exhibited precisely the same scarlet spotted aspect which the nasal membrane did during life. There was no ulceration in the membrane of the nose; nor any collection of fluid within the sinuses of the head.

I shall feel obliged to any reader of THE VETERINARIAN who will enlighten me on this subject; for at present, I must confess, I feel myself in much obscurity.

THE USE OF CHLORIDE OF LIME IN FISTULOUS WITHERS IN A COW.

By Mr. T. HOLFORD, *V. S., Northwich.*

July 2d.—THIS morning I was requested by my friend, George Woolrich, Esq., Sutton Hall, near Middlewich, to examine a cow's back that had hitherto baffled all attempts to cure it. The wound had been dressed with what the cowman called *friendly oils*, &c. On examination, I found her affected with fistula of the withers, the sinuses of which ran on both sides of the chine, emitting a very offensive smell: two, the most aggravated, running perpendicularly between each scapula and the ribs. I was

informed that it had been produced before last Christmas by the friction of a truss which she wore to prevent the protrusion of the uterus. From the recommendation of your highly talented contributor, Mr. Simpson, I was induced to make trial of the chloride of lime in this case; and happy am I to say, that it met my most sanguine expectation, as a complete cure was effected in about a month. The treatment which I pursued was that of opening the sinuses as far as the courses would permit, and injecting a solution of the chloride (a wine-glass of the saturated solution to a pint of water) twice a-day. After two or three dressings the wounds assumed a healthy character, granulation commencing at the bottom, and filling up till the cure was completed.

THE USE OF CHLORIDE OF LIME FOR POLL-EVIL IN A MARE.

By the same.

A MARE that had the poll-evil, and had, for upwards of eighteen months, been under the hands of a farrier, who is considered by the natives of this part to be *well* skilled in the cure of this malady, was sold, for little more than dog-price, to a gentleman of the name of Moore, who was desirous that I should attempt a cure. On examination, I discovered that several deep sinuses had formed on the near or left side of the neck, the bones of which could be distinctly felt with the probe. Considering this a fit case to make trial of the treatment recommended by Mr. Gray, of Edinburgh, I commenced, as described by that gentleman, by opening the sinuses, applying pressure, and daily injecting a weak solution of chloride of lime. In the space of six weeks I had the gratification to see my patient at work, with her head well, and *now* there is no mark visible without turning the hair on one side. I found great difficulty in keeping the splints in their situation; but this I remedied by placing a piece of sail-cloth partly on the forehead and partly on the neck, with holes to admit the ears, likewise other small holes corresponding with the ends of the splints, through which I passed tapes, and tied them on the upper surface of the sail-cloth.

COMMUNICATED RABIES NOT CONTAGIOUS.

By M. Augustin Capello, *of Rome.*

In the "Archives Générales de Médécine," July 1834, there is an analysis of two treatises on rabies by this gentleman, in which he maintains that rabies, after its first transmission from one animal to another, and without an exception so far as the genus *canis* is concerned, loses its venomous property, ceases to be a contagious disease, and cannot be farther communicated. He produces several facts in supposed confirmation of this.

Case I.—In the district of Caserano, near Tivoli, a dog, affected with spontaneous rabies, bit a young man named Dominique Giaco, 24 years old. A few drops of blood escaped from the wound, which healed, and he seemed to be in perfect health. An ox had been bitten at the same time, and the dog was lost sight of. Three days after the bite, the ox exhibited symptoms of rabies; he bit several animals of his own and other species, and was at length shot. None of these animals became rabid.

The disease of the ox so alarmed the young man that had been bitten at the same time, that, notwithstanding he seemed to be in good health, he determined to submit to a course of treatment. Twelve leeches were applied to the part, and lotions of hydro-chlorique acid were applied four times in the day, according to the method of Wendelstadt. The actual cautery was also applied, which enlarged the wound to such an extent that it did not afterwards heal.

Four months passed, and it was thought that all danger was over, when he became melancholy, and was continually weeping. Castor oil was given to him, combined with calomel; fourteen leeches were applied to the anus, and a pound of blood was drawn from the left arm. His melancholy and apprehension rapidly increased. They administered to him by force three grains of the root of the belladonna, every three hours, and continued this during three days without any good effect. The edges of the wound were become fungous, and powder of cantharides was applied. The disease continued to proceed: his aversion for food, and drink, and, at intervals, for every thing around him, increased. In this miserable state he was taken to the hospital, and there strapped to his bed on account of the fever and delirium under which he laboured. He discharged abundance of spumy saliva. It was not possible to make him swallow any kind of food or drink. In some moments of calmness he was bled three times, and the blood was suffered to run until he fainted. The symptoms became more aggravated—the patient longed for death:

three ounces of mercurial ointment were employed in the way of friction: all was in vain. The unhappy man died five months after the bite.

The dead body, which was opened on the same day, had already begun to be decomposed. There were here and there livid spots on the skin; the cerebral vessels were engorged; the laryngo-pharyngeal passages were of a brown-black colour. Through the whole length of the œsophagus, and on the membrane of the stomach, and of the intestinal canal, black spots were observed. The liver was enlarged, the bile black, and emitting a fœtid odour. The pericardium did not contain any serosity, and the heart was diminished in size; the organs of generation were swelled and livid; and the blood, twelve pounds of which had been abstracted, did not coagulate.

A little dog was inoculated with the saliva, and was shut up, but set at liberty again at the end of eight months, having exhibited no symptom of rabies.

Case II.—The dog of a shepherd was affected with spontaneous rabies. Before he was destroyed a certain quantity of saliva was taken, and a cat, and the little dog that was the subject of the former experiment, inoculated with it. On the sixth day after the inoculation, the dog had lost his usual spirits, and began to refuse food and drink. On the eleventh day all the symptoms of rabies were developed; the dog had dread of liquids—fury— and frothy saliva was discharged from the mouth. The nervous excitation increased with great rapidity, and continued until his death, which took place on the fourteenth day after the inoculation.

Case III.—Another little dog was inoculated with the saliva of this one; and a greater number of incisions were made than in the former case. After he had been shut up seven months, he was set at liberty, not having exhibited any symptom of rabies.

Case IV.—In the cat, just spoken of, rabies developed itself thirty-four days after the inoculation, and such was the intensity of the disease, that she died on the second day. Another cat was inoculated with saliva from this one, and was shut up for six months, but no symptom of rabies presented itself.

Case V.—In the month of March 1816, a dog spontaneously rabid, bit, at Tivoli, two other dogs. One of them was killed; the other, attacked with all the symptoms of rabies, escaped through the streets, and bit three or four women, not one of whom was affected with rabies.

Case VI.—In the month of January 1818, M. Capuccini, returning from hunting, saw near Lucana bridge a dog with glistening eyes, and ferocious look, and foaming mouth, attack

and bite his dog. M. Capuccini immediately shot him, without suspecting that he was rabid. Thirty-eight days afterwards, the dog that was bitten lost his usual spirits, refused his food, had dread of water, ran into the street, and bit four dogs which he met. Every body fled at the sight of the enraged dog, except two children, which were also bitten. The dog disappeared, but it was afterwards found dead at the place where the disease first attacked him. It was ascertained, at the same time, that the dog of a gardener had become spontaneously rabid, and that it was the same dog that was killed at the bridge of Lucane. The masters of the four dogs that were bitten complained to M. Capuccini; but he assured them that, having been bitten by a dog in whom the disease was developed by communication, or in the second remove, they were perfectly safe. He gave the same assurance to the parents of the children, and his prognostic was completely verified.

Case VII.—M. Rosa had two dogs, one of a beautiful form, and the other very ugly; the latter, after refusing his food and water, and becoming dispirited, and trembling all over, escaped from the house, never more to enter it; but before he ran away, he bit the other dog, and then directed his course towards Mount Ripoli, where some days afterwards he was found dead. After having ascertained that he had not been bitten by any other animal, and that, consequently, the rabies was spontaneous, M. Rosa was assured that his dog would become rabid. In fact, at the end of fifty-one days, he was attacked by all the symptoms of the malady, and, although confined with some care, he broke his chains, bit a woman in the family, and one of the domestics, and, in a street near Jesus Place, several women who were coming out of church; thence he directed his course towards Palais Communial Street, where he bit several times the dogs of Francois Giansante, and M. M. Betti. He passed through Palatine Place, and directing his course towards Saint Valérie, he met M. de Angelis, whom he bit slightly on the back of the hand, leaving a quantity of spume on the wound: lastly, at Saint-Ange Gate, he bit an old woman and a little girl, and precipitated himself among the ruins of Quintilie Varo. Not one of these persons or animals became rabid.

Case VIII.—A dog of M. Etienne Jani began, towards the end of May 1821, to lose his usual spirits, and would no longer remain with the servant, Seraphin Orsini, whose inseparable companion he had been. On the morning of the 29th he had scarcely gone out of the house, before he flew on a dog of Madeleine Romani, which, although strong, and unprovokedly attacked, did not defend himself. The domestic spoke to him

sternly, and made him return to the house. The symptoms of rabies increased. On the morrow, the dog did not refuse the food which the servant threw to him, but escaped from the house, and the more he was called after the faster he ran. The servant ran after him, overtook him at Cathedral Place, and seized him by the neck. The dog turned, and bit him slightly on the left hand; nevertheless, he was carried back to the house, and the symptoms becoming more violent, he was killed, and thrown into the river. Fifteen days after the bite, the unhappy domestic began to be melancholy—he lost his natural sleep and his appetite, and his bowels were constipated. A purgative of jalap was forced upon him, and some draughts of hydro-chloric acid. The bitten part was scarified, and the cupping-glasses were applied to it. These remedies not being efficacious, opium and muskwere used; but the disease increased, and deglutition became impossible. There were no vesicles, nor any alteration of the frænum of the tongue, or the neighbouring parts. On the fifth day after the commencement of the disease, he died in horrible agony. Peculiar circumstances prevented the examination of the body.

This occurrence had produced great terror in the whole family, when, as the mother of M. Jani was walking in her room, a rabbit, with a great quantity of frothy saliva, bit her on the left leg, and left a slight mark. This rabbit afterwards ran into a neighbouring stable, and several times bit the hind legs of a horse: it then hid itself, and died rabid. There were found on it two wounds, one of which was not healed. This rabbit had lived with the dog that had become rabid. Neither the mistress of the house nor the horse were affected with the disease.

Case IX.—The dog of Madeleine Romani had been first bitten, as was stated in Case VIII. The disease was not developed in him until two months after the death of the servant, Orsini, and the rabbit; perhaps because he was bitten when the disease was in an early stage in the dog. One morning, early, this dog ran out of the house furious, and bit every thing that came before him. Several dogs and five persons were bitten, but neither the one nor the other ever exhibited any symptoms of rabies.

Dr. Capello concludes, from these cases, not only that rabies is not communicated beyond the second person affected, but that its nature is not contagious. "Contagious diseases," says he, "are reproduced many times—nay, almost to infinity, and every where; but this is not the case with rabies. They, either by means of a latent germ, or under atmospheric influence, the nature and mode of action of which is unknown, appear and disappear at certain determined periods: rabies, on the contrary,

knows nothing of these epochs, but developes itself at most irregular and uncertain times. Contagious affections, whether of the system generally or affecting the integument alone, produce invariably some eruption or efflorescence, by means of which we can determine the true character of the disease: rabies, on the other hand, is accompanied by no eruption or discolouration of the skin. They assume characters more or less intense, by reason of certain meteorological changes: rabies, on the contrary, pursues its undeviating course, whatever be the circumstances, the season, the climate, the weather. Contagious diseases gradually lose much of their intensity of character, and some of them have disappeared from the surface of the earth: rabies, from the moment it was first described to the present hour, has uniformly retained the same character. They, however fearful may be their character, spare a few of the individuals which they attack; but rabies, whether spontaneous or communicated, is always mortal. Finally, contagious diseases propagate themselves with so much the more facility in proportion as they are fatal, and are transmitted not only by immediate contact, but by very circuitous means: rabies, although uniformly fatal, is transmitted only through the medium of a solution of continuity.

"A difference so marked," adds the author, "makes me more and more doubt the contagiousness of rabies. Rabies canina seems to me to form the intermediate link which unites the chain of contagions with that of poisons, properly so called. I made these reflections when, after more than forty days, out of the numerous animals that had, in the month of March 1811, been bitten by the ox described in the first case, not one of them had become rabid. I thought of those persons who, without presenting us with any convincing reasons, affirmed that rabies could not be communicated by herbivorous animals, and I felt that the arguments furnished by analogy were utterly contrary to this assertion; for, besides the anthrax of the tongue, and other contagious maladies of herbivorous animals, we had happily discovered the pustule on the teat, which not only could be propagated from the cow, by inoculation, to every other species of animals, but was a preservative in the human being against that destructive scourge the small-pox. In the month of April, in the same year, I happened to see the number for August 1810, of the Medico-Chirurgical Journal of Alexander Flajani, and the train of thought which had passed through my mind received much confirmation. There was an article in that journal in which, besides some cases related by Professor Rossi, of Turin, on this subject, I found the following case, related by Professor Bader. He had a rabid dog, which bit several others. They

became rabid, but they did not communicate the disease to the animals bitten by them. This isolated fact, added the editor, is not sufficient to prove demonstratively the opinion of M. Bader, that rabies cannot be communicated beyond the first inoculation. This very proper reflection kept me for awhile in a state of incertitude; but I was, at length, fully convinced by the cases which I saw in 1813, 16, 18, 20, and 21."

"Does any one ask how it happens that spontaneous rabies should be so contagious, and communicated rabies not contagious at all, when the symptoms of the one and the other are precisely the same? I can only answer, that the science of medicine consists of a series of facts, and that the cases which I have described are facts. I might, indeed, add, that when we attentively consider the physiological and pathological state of organized and living beings, there are many obscure questions, the mystery surrounding which the most ingenious men have not been able to disperse.

"If I may be permitted to advance an opinion, I think that there is one peculiar cause of the development of spontaneous rabies: and this cause certainly does not exist in those that have acquired the disease by communication. The symptoms of hydrophobia from a moral cause, and also those of sympathetic hydrophobia, do they not resemble—simulate—those of essential rabies, and yet they belong not to an affection which is virulent and contagious in its nature? But the symptoms of spontaneous rabies are not identical, at least in degree, with those that characterize the communicated disease. I have constantly observed, that the disobedience to command, the fury, the avoidance of society, which are precursor symptoms of the malady, are more intense, and more quickly appear in those that are affected with spontaneous rabies. The cases which I have reported prove this. It is rarely that dogs affected with spontaneous rabies are seen in inhabited places; when they become diseased they search out for caverns and the most secret recesses."

The author concludes his first memoir with making some observations on the etiology of rabies. Compelled to admit some special cause of the existence of spontaneous rabies, he thus proceeds:—"The reflections which I have made on the development of rabies in the Tiburtine country, induce me, among other causes described by authors, to recognize one exclusively, which I think will be the same wherever essential rabies manifests itself. It is neither rage, nor hot food, nor putrid meat, nor confinement, nor excessive fatigue, nor suppressed perspiration, nor variety of temperature, but simply venereal desire carried to excess and not satisfied. This circumstance seems to me to be the absolute

cause of rabies. There are a greater number of male dogs at Tivoli than of females. The bitches, when they are at heat, are usually shut up, that they may breed with some selected male; the other dogs, led by instinct, wander about the houses in which the females are confined. In proportion as the gratification of the natural desire becomes more difficult it increases in violence, and it is easy to conceive of the sufferings of the animal, and the constitutional injury inflicted, when these desires are not gratified at all."

The particular structure of the sexual organs in the genus *canis* strengthen, according to the author, the opinion that this may be the exciting cause of rabies. "They have no *vesiculæ seminales*, so that the semen cannot be secreted without copulation; and there is, besides, in the canine race, a mechanism which prolongs the act of copulation. In other animals, on the contrary, provided with *vesiculæ seminales*, there is a kind of reservoir for the semen, in which it can not only be absorbed, but from which it can be occasionally ejected without copulation. The constant superabundant semen in the spermatic vessels of the dog, and the state of venereal orgasm in which he so frequently or almost constantly is, must produce their effect on his whole constitution.

"In Egypt, and in other Mahometan countries, rabies is unknown, on account of the facilities which the canine race there experience for the gratification of their venereal desires. Some celebrated authors assert that castrated dogs are rarely affected with rabies."

In a second memoir, M. Capello endeavours to shew that the opinions of several authors are in accordance with his, that rabies cannot be communicated to a third individual.

NECROSIS, AND REMOVAL OF THE COFFIN BONE (OS PEDIS).

By M. Garcin, *V. S., Hières.*

There is no record in the history of veterinary medicine of the removal of the os pedis from a monodactyle, and of the cure being so complete that the animal was as serviceable as before. The relation of a fact of this kind will be interesting, not only in a pathological, but a physiological point of view—the hoof, although deprived of connexion with the podophyllous tissue (the sensible laminæ), yet not only adhering to the coronary substance, but continuing to grow.

On the 1st of May I was requested to attend on a mule, seven or eight ears old, and lame in the right fore leg. Two days before, the owner had drawn a nail from the foot, that had penetrated two inches near to the point of the frog, and, notwithstanding the consequent lameness, he had continued to work the animal. The lameness was now extreme, and a greyish fœtid matter escaped from the wound, which had taken a direction upwards and backwards. A pledget dipped in oil of turpentine was the only thing that I at first applied.

On my second visit, on the 4th, the wound was of a livid colour, with the same kind of fœtid discharge as at first. A fistula had now reached the pastern, passing over the superior surface of the frog. I removed a portion of the sole and the frog, and brought to view the expansion of the perforans tendon, the colour of which was also livid. The wound was dressed with digestive ointment, rendered more stimulating by tincture of aloes.

The swelling was considerably increased on the 7th of May, when my third visit was made; it extended from the knee to the coronet, and a stinking serous fluid exuded from the coronet. The mule evidently suffered much, and could no longer rest her weight on the lame foot. To the former application I now added some Goulard lotion; pledgets of tow bathed in it were wrapped round the coronet.

M. Garcin goes on to describe the rapid separation of the hoof from its attachment to the coffin-bone—the appearance of tumour after tumour on the coronet, each of which in turn broke and discharged fœtid pus, mixed at length with exfoliations of the anterior ligament of the articulation of the foot; and then the discharge of synovial fluid, evidently from the joint between the coffin-bone and the lower pastern, until the 2d of June, when he says, "the whole laminated tissue of the os pedis was destroyed, and the bone itself no longer held in its horny box, but by a very small portion of ligament, so that, introducing my fingers into an opening that had been made in the anterior part of the horn, I was enabled to draw it out with scarcely any difficulty."

"It is easy to imagine," he goes on, "how strange an appearance the foot presented, deprived of the bone which formed its base. The sole had, before this, been entirely taken away, and the anterior portion of the crust. A white fibrous substance, however, began to appear, by little and little, within the void; it hardened, and it finished by covering itself with a species of horn which securely defended it. This new foot, if we may give it that name, was covered by the remains of the old hoof, from which it was separated by an interval of some lines."

In the month of July I put on a shoe long at the heels, and with the nail-holes near the heels, and I placed felt between it and the crust, to preserve the new foot from concussion, and from that moment the mule was able to work. In September it went to coach work, and it was serviceable for two years, and was much less lame than any one would have thought it was possible to have been.

It afterwards died, far from my residence, in consequence of some chest disease; and I regret that I was not able to ascertain, by dissection, what new production or kind of stump had grown from the smaller pastern. It will, however, always stand on record, that after a casualty so serious as the loss of the coffin-bone, the mule was able to work more than two years.

Rec. de Méd. Vét., Juin 1834.

CHRONIC ENLARGEMENTS OF THE MAXILLARY AND PAROTID GLANDS, REDUCED BY THE USE OF THE HYDRIODATE OF POTASH.

By Mr. W. F. KARKEEK, *V. S., Truro.*

A FAVOURITE old horse, the property of a gentleman in the neighbourhood of Truro, was, a few months since, placed under my care for a chronic enlargement of the maxillary and parotid glands. Several blisters had been applied by a farrier, but they only increased instead of diminishing the enlargements. The disease had existed for two months; the tumours were hard and scirrhous, and the submaxillary glands, in having attained the greatest size, were as large as moderate sized oranges.

I administered aperient medicines, and introduced a seton over the diseased glands underneath the jaw, which was dressed with the strong mercurial ointment. The ointment was likewise rubbed on the glands twice a-day. This treatment proved injurious instead of being beneficial. The repeated blistering of the farrier aggravated the evil, and I believe that the seton and mercurial stimulants did so likewise.

I now determined to try the effect of iodine. The parts were bathed with warm water, and emollient applications were used for a day or two, in order to soften the parts; the iodine ointment was then applied twice a-day, in the proportions of one drachm of the metal to an ounce of lard; and five grains of iodine were administered daily, made into a ball with some powdered gentian and treacle.

I continued this plan of treatment for three weeks, increasing

the strength of the balls to ten grains per day. Seeing no beneficial effect from this plan, I applied the iodine in the form of a liniment to the tumours, made according to the following formula:—

℞ Linimenti saponis C.
Tincturæ iodini ..... āā ʒj, misce.

After a fortnight's trial they were discontinued, and the animal was turned to grass. No medicines were given for some time; the glands remained as hard and as large as when I first examined them.

Determined not to be baffled, I tried the effect of the iodine in the form of the hydriodate, as an ointment and internal medicine.

They were employed according to the following formulæ:—

Unguentum Iodini.

℞ Potassæ hydriodatis .... ʒiss.
Adipis preparatæ ..... ℥j, misce.

Hydriodate Balls.

℞ Potassæ hydriodatis gr vj to gr. xij.
Pulv. Gentianæ ..... ʒss.
Syrupi q. s. ut fiat in bol. j.

The ointment was applied twice a-day, and two of the balls were given daily,—one in the morning, and the other in the evening, increasing their strength two grains per day, until 12 grains were administered twice a-day.

In about a fortnight a considerable alteration had taken place in the enlarged glands: they first became softer, and afterwards began to diminish in size. The internal use of this mineral was now discontinued, but the unguent was applied for about ten days longer, at the end of which period the glands were reduced to their natural size.

In reviewing the history of this case, it appears that the blisters applied by the farrier, and the seton and mercurial frictions by myself, instead of diminishing, increased the disease. Neither did the iodine, when employed in its metallic state, appear to have any effect whatever on the enlarged glands. The influence of the salt was perceptible after being used for a few days. I am not prepared to say, that the reduction was altogether owing to the hydriodate, and none to the metal. The efficacy of the salt, however, in this case, was very perceptible; and it is plain that it must act with considerable energy upon the whole system; for to suppose that it travels to the diseased gland, and expends its influence there, and there only, would be absurd.

The following history of the iodine, perhaps, may not be considered uninteresting to the veterinarian. It is a simple body, discovered in 1813 by M. Courtois, in the mother waters formed in the preparation of soda, where it exists in the form of hydriodate of potash. These waters are obtained by burning the different fuci which grow on the sea-shores of Normandy, lixiviating the ashes, and concentrating the liquor.

The name of iodine is derived from the Greek word ἰωδὴς, on account of the blue colour of its vapour. It is solid at the ordinary temperature in the form of small greyish crystals. It fuses at 338° Fah. and volatilizes at 347° Fah., forming a very beautiful violet-coloured vapour.

Iodine is soluble in ether, and in spirit of wine: it has the property of forming an acid with hydrogen, and another with oxygen.

Hydriodic acid is obtained by pouring water on an ioduret of phosphorus made of eight parts of iodine and one of phosphorus, and distilling the liquor.

Hydriodic acid can be united to a great number of bases, and forms neutral salts with some of them, of which the hydriodate of potash has hitherto been the most extensively employed in medicine.

The hydriodate of potash may be made by pouring on iodine, in its metallic state, a solution of potash: an iodate and a hydriodate are then formed, which may be separated by means of alcohol, which only dissolves the latter of these salts. The hydriodate may then be obtained by evaporation.

M. Coindet, a physician of Geneva, first used iodine in medicine. He employed it in the treatment of goître with very marked effects. These trials were repeated by several medical practitioners in France, Switzerland, and Great Britain; and their observations have proved that we now possess in iodine an efficacious remedy for the removal of a disease which has been hitherto cured with difficulty.

Mr. Youatt has used it in bronchocele in the dog and swine with advantage; and in cattle, he says, it scarcely ever fails to disperse enlargements of the glands, or hardened tumours, whether under or at the side of the jaw, or round the joints. In indurations of the udder he has likewise found it singularly successful.

We know of no important part that iodine performs in nature's works. It seems of no value to art, and is not necessary to life. It is made by the chemist, though it is beyond his art to *unmake it*. We have called it a simple substance; we consider it as such, from the fact of its having hitherto resisted all the efforts

of the most celebrated chemists to decompose it. As a remedy in veterinary practice, we consider it most valuable. The discovery of iodine was purely accidental; and but for unforeseen circumstances, one of the most curious, as well as valuable substances, might have remained unknown, since nature has not distributed it either in a simple or compound state through her different kingdoms, but has confined it to what the Roman satirist considers as the most worthless of things—the "wild seaweed."

EXTRA-UTERINE CONCEPTION IN A HEIFER.

By the Rev. H. BERRY.

A FEW years ago I had a valuable heifer, whose time for calving had arrived, who had exhibited all the usual symptoms of nearly approaching parturition, and whose pains were coming on evidently, and very acutely. I concluded all was in a proper train for a speedy termination of an affair in which I generally take much interest.

It happened on this occasion that I was called from home; and after being absent a day and a night, to my surprise, I found the heifer in the same state in which I had left her, except that she suffered under considerable accession of fever, and from the painfully distended udder usual in cases of protracted parturition.

Under the circumstances, I resolved on examination, suspecting a wrong presentation of the calf, when, to my utter astonishment, on passing my hand, without difficulty, into the womb, I found it contained no inmate. My first suspicion was that the heifer might have calved in the field; but this idea was soon abandoned, for, on applying my thumb above the flank, I distinctly touched a calf.

While in the perplexity natural to the difficult circumstances in which I was placed (more difficult, because my then neighbourhood, like all others with which I have ever been acquainted, afforded no effectual professional relief for this valuable kind of stock), the late Mr. Lockley, of sporting celebrity, paid me a visit, and having satisfied himself also that there was a calf, but not in the womb, we mutually agreed, being desirous to save the calf, that the Cæsarean operation should be performed, and a professional gentleman, who attended my family, kindly officiated on the occasion.

The result was, as we anticipated, fatal to the heifer; indeed, she was completely exhausted before the operation commenced.

The next important part of the affair was, that the operation brought to daylight a mass of fungous matter, weighing not less than seventy pounds, in the centre of which lay a remarkably fine heifer calf, fully matured, and evidently a very short time dead. The most minute examination was instituted, but no connexion appeared between the womb and the part inclosing the calf, except by external adhesion.

I considered it worthy of remark, that, although it was impossible that the calf could have been expelled in the usual way, every part requisite for the performance of that operation was distended, and acted on as in an ordinary case; and the capacity of the womb was, I should think, under the circumstances, extraordinary.

ON THE USE OF THE OMENTUM.

By Mr. W. Dick.

In examining the bodies of horses which had died from the effects of a rupture of the stomach or any portion of the intestines, I had always observed, that a large proportion of the matter which had escaped through the rupture into the cavity of the abdomen had been collected in the omentum; but, as in most cases, there was also a considerable quantity extravasated among the intestines, my attention was not particularly excited by it until about eight months ago, when I met with a case in which the matter that had escaped from a small rupture in the stomach was entirely collected by the omentum. This circumstance suggested the idea, that either the omentum must have an action that would enable it thus to collect the extravasated matter; or the intestines must have a motion against the omentum, capable of producing the same effect; or otherwise, that the matter escaping through the ruptured portion must have passed directly upon the omentum: but this last process could not have taken place here, because the opening in the stomach was not upon the omentum. In reflecting on these circumstances, it occurred to me, that if I could clearly explain these things, it might serve to shew what is the true use of the omentum; and as it was at once evident that this organ, although floating among the intestines so as to collect the extravasated matter from among them, must have some more important office to perform than that of thus accidentally taking up foreign substances, it must, in being moved in the situation and the manner in which the matter was collected, be continually sliding among the intestines.

In the horse, and all his tribe, this organ is small and delicate compared with what it is in other animals; and is, in ordinary cases, chiefly placed between the peritoneal surface of the greater curvature of the stomach on its sternal side, and the arch of the colon. In the ox, sheep, &c. it extends over the whole of the sternal—the most dependent surface of the paunch; and is interposed between the paunch and the abdominal parietes. In the dog and swine the omentum extends from the stomach over the whole of the inferior portion of the viscera, and is interposed between them and the inner surface of the abdominal parietes, similar to what is found in man.

In all these animals the abdominal viscera differ considerably in their arrangement and magnitude, and have some variety in their action. In the horse, the stomach is remarkably small in proportion to the size of the animal. He feeds rapidly; the digestive process goes on quickly, and the stomach is, consequently, liable to frequent changes in its state of distention. The colon, which in the horse is as remarkably large as the stomach is small, makes a kind of double circle round the cavity of the abdomen, passing from the right iliac region forward, round, and to the left, then returning for some distance, and at that part of the arch of the colon upon which the stomach rests, is very large, and presents a flattish surface, where the omentum is interposed between them, and at length terminates in the rectum.

The colon rests entirely on the abdominal parietes, having none of the omentum interposed, unless when some morbid action has been produced. And, as already stated, it in these cases collects the foreign bodies which have been extravasated, the removal of such bodies tending evidently to diminish friction. Now, if the omentum has this power under a diseased action, may it not naturally be inferred, that it may, even in a healthy state, have this function assigned to it. But, if such were its functions, we might expect that in an animal like the horse, and all belonging to his class, we should find an omentum extending over the abdominal parietes, as in the dog, swine, and their tribe.

This, however, is not the case, because it is not required. The longitudinal bands, which are so conspicuous in these animals in the colon, are of a ligamentous structure, and seem to have no action of themselves; but serve only to bind together the other coats of the intestines in a puckered form. The muscular fibres are attached to the longitudinal ligaments; and as the ligaments remain almost entirely stationary, the muscular coat pushes the contents along by the alternate contraction and relaxation of the fibres, without changing the portion of the intes-

tine from its relative position in the abdomen; very little friction, therefore, is likely to take place between the peritoneum of the colon and that of the parietes of the abdomen, and, consequently, an omentum is not required in that situation.

In the ox, sheep, and other ruminating animals, however, the paunch is large, and rests upon the abdominal parietes to a great extent. In them, if the extensive plain surface of the stomachs had to move on the similarly plain surface on which they rest, there would of necessity, from the weight of the rumen, be a considerable degree of friction; but to prevent that, and to facilitate the motion of the paunch, which is considerable, there is interposed between them an auxiliary substance—the omentum; and this extends throughout the whole of that part of the abdomen where this pressure is most severe, and serves therefore to assist the movements of the parts on each other, with a facility which could not otherwise exist. The fat, too, which it contains, contributes much towards this effect; for being in a semifluid state, and in irregular masses, it more readily assists in the movements which are taking place by yielding to them, and is increased in quantity where it is most required for this purpose. The small quantity of fat which the omentum of the horse contains sufficiently shews that it is not a reservoir for this substance, as some have been led to imagine.

In the dog, the hog, and many other animals, there are different conditions of the parts. In these animals the stomach is small when compared with the ruminants, and the intestines have not the marked difference in size which is so conspicuous in the horse; yet, in these animals, the omentum is large, and extends from the diaphragm back to the pelvis, interposed between the parietes of the abdomen and the intestines, containing a considerable quantity of detached portions of fat, but by no means the quantity found in oxen, and animals with a similar arrangement of organization.

All these quadrupeds have a rapid peristaltic motion of the intestines; and this rapid peristaltic motion being essential to the well-being of the animal, requires to have an omentum so formed and arranged as to facilitate their motion most readily; and such we find to be the case. The omentum in these animals slides more freely between the intestines and the parietes of the abdomen, or rather aids those parts to change their relative position more readily than in the other classes of animals to which I have alluded.

From what I have stated, and from what is to be found upon a more extensive and general examination of the subject than I have thought myself warranted to make, I am led to conclude,

that the use of the omentum is entirely for the purpose of facilitating the motion of the digestive organs ; and that the difference which is found in regard to its size, is owing to the peculiarities of the digestive apparatus in the different species of animals where such variety of it is found.

THE VETERINARIAN, NOVEMBER 1, 1834.

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

THE arrangement of our periodical is somewhat altered. We have placed side by side extracts from the works of continental veterinarians and voluntary communications from practitioners in our native country. The pursuit in which, on this side of the channel and the other, we are engaged—the improvement of veterinary science—is truly a noble one: it may well stimulate us to unremitted exertion, and it may bind us together in one common brotherhood.

We have made no invidious selection, in this our first number in which such an arrangement has been adopted ; no new paper has been added—not one has been subtracted. A few of our readers know the circumstances that gave birth to this altered plan ; a plan which we are not sorry that we have adopted, and from which we already anticipate very favourable results. In our first fasciculus there are contributions from the north and the south of the Tweed ; from France, from Italy, and from Egypt ; from professors, veterinary surgeons, and amateurs ; and in such an union there must be strength.

First, is the commencement of the record, by M. Leblanc and Dr. Trousseau, of as valuable a series of experiments as ever were instituted by a veterinary surgeon, and a co-operation in which will not disgrace the most eminent human practitioner. Mr. Blaine is the only English writer who has condescended to treat of the prognosis and the treatment of these wounds. Fortunately they are of rare occurrence, but no one had hitherto taught us the circumstances under which we might hope for success, or the principles on which our treatment of these wounds should be founded. The experiments of these gentlemen will be found to include every possible variety of punctured thorax, and will be an almost unerring guide to the opinion which we give of the probable result of the case, and the mode of treatment which we

are to pursue, and both founded not on theory, too often deceptive and worthless, but on repeated experiment.

Next comes a very unobtrusive but valuable description of that malady, almost uniformly fatal, "Bronchitis in Cattle." The symptoms are well and accurately sketched. The disease can now be scarcely mistaken, and the practitioner will not blunder and lose time by having recourse to inefficient measures. The operation of tracheotomy will not be neglected in urgent cases; and, perhaps, to inhalation of the vapour of turpentine will be added the administration internally, and in no small doses, of a medicine that so soon enters into and pervades the whole circulation.

The concluding portion of M. Hamont's Essay on the Rot in Sheep will be read with feelings of a mingled character. The facts which he states of the sheep of the Egyptians and the Bedouins being equally attacked by this disease when they feed on the pastures from which the waters of the Nile have just receded—and the opposite termination of the disease in the flocks of the one and the other—and the means by which the sheep of the Bedouins are rescued from the impending fatality, while so great a portion of those of the fellahs are destroyed,—are exceedingly interesting, and will give rise to much serious and useful reflection.

The theory of M. Hamont will likewise receive due consideration, although, perhaps, we shall doubt much whether this feeding on the dyssa, saturated with the watery principle, and producing an entire decomposition of the blood, is the true explanation of the disease; or rather we shall wonder that, tracing this disease to the banks of the Nile alone, and appearing there at one season of the year only, namely, a little while after the waters had retreated to their proper channel, and had left a surface rich in vegetation, exposed to the influence of a burning sun, and consequently decomposition rapidly taking place, he had not attributed it to the baneful influence of the effluvia or emanations which must then be emitted; and especially when a similar disease, almost identical in its symptoms, progress, and termination, attacks, at the same time, the human being who is exposed to the same emanations, but does not live on the same food.

Our surprise may, perhaps, be a little increased, when we find M. Hamont (p. 540 in our last number) giving credence to an assertion of M. Gasparin, with regard to the proportionally small quantity of blood which flows in the veins of the sheep, and making it the foundation of certain reasoning; whereas, instead of the sheep having little blood compared with the ox, he has, in proportion to his size, and as we should expect from the nu-

triment which must be given to the fleece as well as the carcass, a considerable quantity more, comparing bulk with bulk, than the vessels of the ox contain.

This, however, we can forgive; but our surprise is mingled with regret, when the founder of the Abou Zabel school, whose name will honourably live in veterinary story as long as the art itself has existence, should condescend to have recourse to a line of argumentation unworthy of his high talent, his high desert. His attack on M. Hurtrel d'Arboval was uncalled for; and the manner in which it was made, and the weapons which were used, are utterly indefensible.

M. Hurtrel d'Arboval is a physician; but he has for many a year devoted himself to veterinary study, and he has experimented on the diseases of sheep and of cattle to a very considerable extent. The experience and the advantages of many a veterinary surgeon cannot for a moment be compared with his. He made himself acquainted with every fact connected with, and that could bear upon, our art; and at length, although no graduated veterinarian, yet relying on the candour and honourable feeling of the profession, he published the result of his labours in the form of a veterinary dictionary. In that work he has shewn himself perfectly master of his subject: there is not a point on which any one has dared to accuse him of gross ignorance; there is not a page in which he has wilfully suppressed any important fact, or robbed a single individual of his literary or scientific claim. The only objection that can be made to him is, that he somewhat frequently enters a little too largely into considerations of *general* physiology, without going at once, or so soon as he might, to the physiology of the animal and of the case. With this drawback, the work is an honour to the author, and an honour to the veterinary profession, with which he had identified himself. It is a standard book; and we only wish that some "amateur" would favour us with a similar one.

M. Hamont's allusions to him, and personal addresses to him, as "super-eminently skilful,"—"physiological physician,"—"a cleverer person than others;"—his apostrophizing the "officers of cavalry, the proprietors, farmers, cultivators," and beseeching them not to ask M. D'Arboval "any improper questions," and all because M. D'Arboval did not believe in this "decomposition of the blood," but traced the rot to some subacute inflammation of the digestive organs,—this is utterly unworthy of M. Hamont; and they who were almost disposed to idolize him for his generous devotedness to the interests of the Abou Zabel school, would fain drop a tear on this record of human inconsistency, and blot it out for ever.

But such is the way in which our continental brethren too frequently conduct their controversies. There are two French veterinary periodicals—the "Recueil," and the "Journal." They are edited by the very *elite* of the French school, and they have both essentially contributed to the progress of veterinary science in France; but they verify the old adage, and Messrs. of the "Recueil," and the "Journal," seem to hate each other with perfect hatred, and suffer no opportunity to escape of exposing and annoying each other. Each gives an analysis of the essays contained in some preceding number of the other. Were this fairly conducted, we should somewhat object to it: it would be a kind of literary piracy and robbery; it could proceed from no other motive than the desire to limit each other's sale; and in this they would both succeed to a degree which we wonder they are not wise enough to foresee. But the analysis is not fairly conducted. Every little error in the communications to each is exposed, magnified, misrepresented, and condemned as an unpardonable literary blunder and falsehood; and, frequently, the respective editors proceed to personal attacks on each other, even more uncalled for, and more censurable than those of M. Hamont on M. Hurtrel d'Arboval.

Are they not aware to what degree they must lower themselves in the estimation of their readers and the public, when they can thus sacrifice good feeling, and, sometimes, literary honesty? Can they wonder, if it is the general remark that their journals are not so instructive as they used to be? Who will contribute to either journal, when he knows that he is offering himself to the other a sacrifice on the altar of jealousy and malice? Can they not see how fatally they are sacrificing the interests of science? In the "Recueil" for July was a most unwarrantable attack on M. Dupuy. In that for August there is not any "Analyse." The analysis in the "Journal" for that month was confined to a brief detail of the principal matter; that in the July number contained nothing offensive, but a sly sneer at M. Gaulet. May we hope that this is the commencement of a better æra? That journal will deserve the thanks of the public, and of the friends of veterinary science, which first ceases to disgrace its pages with these *new* and abominable analyses.

Mr. Percivall's paper on "Scarlatina in Horses" is a new contribution to science. The disease is occasionally met with in practice, but has never before been described.

The account of the use of the chloride of lime in fistulous withers in a cow, and in poll-evil in a mare, by Mr. Holford, is valuable, as confirmatory of a new and most successful system of practice. With a seton, or setons, properly inserted, and the

diluted solution of the chloride of lime, the practitioner will not fear to encounter the worst cases of fistula.

What shall we say of our Italian friend, M. Capello? Why, that the subject of which he treats is one of fearful importance, and deserves most attentive consideration. It contains, if his opinions are founded on fact, the bane, and its most imperfect antidote, of our connexion with the faithful and reasoning dog. If rabies has or can have a spontaneous origin in him,—if it can arise from causes, the nature of which no pathologist has yet determined, and there is nothing to warn us of the approach of danger (for if there is any fact in the history of the dog uncontrovertible, it is this, that he is capable of communicating the disease before there is a symptom by which that disease can be recognized by the common observer), and if the malady which he communicates has hitherto bid defiance to medical skill, it becomes a question of no very difficult solution, whether, deaf to every plea for mercy, the companion of many of our pleasures, the guardian of our properties and our lives, our quadruped friend, should not be at once condemned, devoted, and hunted from among us, until the whole race is extirpated.

We will not enter into the question of spontaneous rabies here; it will soon come before us in the course of our periodical tuition, and our sentiments will be fully stated in this Journal; but we call upon our readers to think of it, and to compare it with the facts which they have observed, or which may be brought under their notice.

As to the antidote, that "the disease cannot be commuicated after the first degree," or that the animal in whom rabies has been produced by inoculation can spread it no farther, and that, with the exception of more or less temporary pain, the bite is harmless, it would be, indeed, a glorious thing if this could be proved. It is a long list of cases which M. Capello gives, and they deserve attentive consideration. Is there, or is there not, a fallacy running through the whole? Is, or is not, that taken for granted which can never be proved, or which, in fact, does not exist? Is little more established, than that there is, fortunately for us, a want of predisposition in man to be affected by the virus? Is any thing more done than to place on firmer ground the consolatory fact, that, if a certain number of persons were bitten by a rabid dog, the decided majority would escape future evil? We should be happy if we could enlist some of our brethren in the elucidation of these points.

For ourselves, we ardently wish that events which have occurred since the translation of M. Capello's memoir was sent to the printer had never had existence, for we should have had one

melancholy proof less, that rabies *can* be communicated after its first transmission. A human being has perished, that was bitten by a dog that had himself been bitten a few weeks before.

As to the occasional or general cause of the spontaneous origin of rabies, we know that the theory of M. Capello is becoming fashionable among some continental physicians; but we here, as in many other cases, only wonder and smile at the absurdity of fashionable doctrines and practices.

The paper of M. Gasparin is well worthy of record; for although not so full and scientific in its details as we could wish, it nevertheless, establishes the fact, otherwise almost incredible, that an animal may continue to be, to a very considerable extent, useful after the bone of the foot has been completely destroyed by disease; and that nature, amidst her wondrous resources, is able to supply even a second or supposititious os pedis.

The case related by Mr. Karkeek, and which, to preserve the order that we wished, should have been placed before that of M. Gasparin, goes to establish the power of iodine over glandular enlargements in the quadruped. It was a great step in the progress of veterinary science, when the discovery of M. Coindet was applied to our patients. We were, to a very pleasing extent, successful in cases which had previously been utterly intractable; yet the iodine seemed to exert a somewhat capricious power. It would have influence to a certain extent, and then, all at once, it would deceive our wishes and expectations, and appear to be perfectly inert; and in more cases than one, instead of reducing the morbid growth, on account of which it was administered, it would, as in the human being, waste the general condition and strength of the patient. It was an admirable improvement when the hydriodate of potash was substituted for the mineral. It will be found to succeed where the other seemed to be destitute altogether of power; it will not deceive the hope which it has once encouraged; and, so far as we have had opportunity of testing its agency, there is (common care being taken) no evil mingling with the good which it effects. A fair field is open for its extension to other diseases;—who will first occupy it?

Next in our list comes an "Amateur," a zealous and scientific agriculturist, and whose contribution we receive with pleasure and gratitude. No jealousy of such men will ever exist in our minds,—no contemptuous sneer will await their overtures of alliance in effecting the improvement and the perfection of our noble art. Every intelligent inquirer,—every friend to veterinary science—will be welcome to our ranks; and to unfounded prejudice and empiricism alone shall we stand opposed. This communication from Mr. Berry (the editor of that most useful journal, the

British Farmer's Magazine, and which we would warmly recommend to the notice of our readers), besides its intrinsic interest, as relating a very singular case of extra-uterine conception in the cow, is hailed as a pledge of the commencement of a union desirable and advantageous between the veterinary profession and the agricultural interests of the country, and which will soon efface that stigma on our art which has too long attached itself to us, that in few parts of the country has there been afforded any "effectual relief for this valuable kind of stock." It is for men like Mr. Berry to hasten the accomplishment of this most desirable object.

Last of all, we insert from Mr. Dick a luminous *exposé* of the physiology of "the omentum,"—admitting of much variety of extent, construction, and complication in different animals, but admirably adapted to the general form, and habits, and uses of each, and illustrative also of the character and treatment of various diseases, and of some of the accidents to which the animal may be exposed.

We trust that our readers will not disapprove of our plan. We fearlessly place our own contributors in competition with the practitioners of other schools; and we will work together a united band in the cause of science, humanity, and national interest.

And now the writer of this leader has a favour, a very great one, to ask of the readers of THE VETERINARIAN, viz., that at their early convenience they will favour him with *(and prevail on intelligent agriculturists also to transmit to him)* answers to the subjoined queries. They have relation to the work on Sheep, which he is now anxiously preparing, and which he would fain make, so far as he has power, worthy of its subject.

Every communication will be duly and thankfully acknowledged in the course of that work. From some of his friends he received information on several of these points, two years ago, but they will perceive that the inquiries are now considerably extended.

1. Is there any distinct or prevailing breed in your district?
2. Is the breed, or the different breeds, so far as it can be ascertained, native or introduced?
3. Is it hardy or delicate, active or quiet?
4. Has it been crossed with other breeds—with what breeds, and with what effects?
5. What is the description of its form and appearance? In what points does it excel, or is deficient?
6. What is its average weight?—the fore quarters?—the hind quarters?—the whole carcass?
7. The nature and quality of the mutton?

8. Is much tallow carried within?

9. The proportion of offal?—the average difference between the live and dead weight?—the comparative size of bone?

10. The character of the breed as, compared with their size, great, or moderate, or little feeders? Statement of any experiments that have been made to ascertain this?

11. The usual food, and its changes?

12. Average weight of the fleece?

13. The length of the wool—character of it—the purposes for which it is used?

14. Has any change taken place in the length, character, and purposes of the wool?

15. Character of the fleece on different parts of the animal?

16. Time of shearing, and how often?

17. The shearing of the hoggets?

18. At what age does the animal arrive at perfection?

19. The average number of lambs, and at what season of the year?

20. Are the lambs well covered when first dropped?

21. Is there any and what particular difficulty in yeaning, and what is the average mortality among the lambs?

22. The time of weaning—castration—tailing, if adopted—and the general management of the lamb?

23. Any house or grass lamb, and the method of preparing it?

24. Prevalent diseases and mode of treatment?

25. Statements of extraordinary epidemics, or mortality?

26. Disposal of the animal—average price of carcass and wool?

27. Character of the shepherds, and peculiarities respecting them?

28. Is the system of folding adopted or neglected, and why?

29. The object of the farmer, and the general system of husbandry in the district?

30. The soil, climate, and general situation and aspect of the country?

Franks would be acceptable; but if not to be obtained with perfect ease, never mind postage: double, treble postage will not be regarded by him who will ever feel himself obliged by communications on these points.

Y.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

Bridgewater Treatises, No. 5. Animal and Vegetable Physiology, considered with reference to Natural Theology. By Peter Marle Roget, M.D., *Secretary to the Royal Society, &c.* 2 vols. 8vo.—London, 1834. Pickering.

Dr. Roget has treated his subject in a masterly manner; and has supplied a desideratum that has been long called for, namely, a popular treatise on Comparative Anatomy in our language. He commences by discussing final causes and the functions of life in general; and then proceeds to divide his subject into the mechanical, vital, sensorial, and reproductive functions. Each of these he traces up from their earliest development in the lowest scale of existence to their highest state of perfection in the animal kingdom. It would be a pleasing task for us to follow him in this highly interesting subject; but in a publication like ours, we must be contented with a few of the interesting facts that most intimately concern us as veterinarians.

The author has embellished his work with a multitude of well executed illustrative woodcuts, the existence of which considerably restricts us in our choice of extracts. He thus describes the *mechanical functions of mammiferous quadrupeds in general.*

"The office of the limbs, as far as they are concerned in progressive motion, is twofold. They have to sustain the weight of the body, which they must do by acting in opposition to the force of gravity; and they must, secondly, give the body an impulse forwards.

The limbs of quadrupeds constitute four columns of support to the trunk, which is placed horizontally above them; but the whole weight of the body, together with that of the head and neck, does not bear equally upon them: the fore extremities almost always sustain the greater part of that weight, both because the fore part of the trunk is itself heavier than the hind part, and because it is loaded with the additional weight of the head and neck. Hence, in the usual attitude of standing, the pieces of which the fore limbs are composed are required to be placed more in a straight line than those of the hinder limb; for the power of a column to support a weight is the greater in proportion as it approaches to the perpendicular position. The hind limbs are composed of exactly the same number of divisions; but the separate portions are usually longer than those of

the fore extremity, and, consequently, if they had been disposed vertically in a straight line, they would have elevated the hinder part of the trunk to too great a height compared with the fore part. This is obviated by their forming alternate angles with one another. As the pelvis connects the spine with the joint of the hip, and even extends farther backwards, the thigh bone must necessarily be brought forwards; then the tibia and fibula, which compose the bones of the leg, must be carried backwards to their junction with the bones of the foot; and, again, the foot must be turned forward in its whole length from the heel to the extremities of the toes. On comparing the position of the corresponding divisions of the anterior and posterior extremities, we observe that they incline, when bent in opposite directions; for in the former we find, in following the series of bones from the spine, that the scapula proceeds forwards, the humerus backwards; the radius and ulna again forwards, and the lower part backwards,—positions which are exactly the reverse of the corresponding bones of the hind limb.

"The weight of the body, in consequence of this alternate direction of the angles at the successive joints, must always tend, while the quadruped is on its legs, to bend each limb; a tendency which is required to be counteracted by the actions of the muscles which are situated on the external side of each of those angles. These muscles are the *extensors* of the joints; that is, the muscles which tend to bring their parts into a straight line. It is, in fact, by this muscular action, much more than by simple rigidity, that the limb supports the superincumbent weight of the body. It is evident that greater muscular force is necessary for this purpose when the joints are bent than when they are already extended; and the positions of the fore legs being naturally in this condition, require less power than those of the hind legs to retain them in their proper relative positions.

"The most complete instance of a vertical arrangement of the bones of the extremities is seen in the elephant, where, in order to sustain the enormous weight of the body, the limbs are shaped in four massive columns, of which the several bones are disposed nearly in perpendicular lines. By this means the body is supported with scarcely any muscular effort, and the attitude of standing is, in this animal, a state of such complete repose, that he often sleeps in that position. But in almost all other quadrupeds the mere act of standing, though a state of comparative rest, implies, for the reasons already given, a degree of muscular exertion, and they can enjoy complete repose only by letting the body recline upon the ground.

"The conformation of the hind extremities, which, as we

have seen, is not so well calculated for the simple support of the trunk, is, on the other hand, better adapted to give it those impulses which are to effect its progressive movements. The nature of these movements, and the order in which they succeed each other, are different according to the peculiar mode of progression which the animal practises, the degree of speed which it is desirous of exerting, and the particular end it has in view. The paces of a quadruped, usually distinguished, are the *walk*, the *trot*, the *gallop*, the *amble*, and the *bound*.

"In slow *walking*, only one foot is raised from the ground at the same moment, so that three points of support always exist for sustaining the weight of the body. If the centre of gravity be situated, as it generally is, nearly over the middle of the quadrangular base formed by the feet while they rest upon the ground, the first effort to advance which the animal makes propels the centre of gravity forwards. This it accomplishes by pressing one of its hind legs against the ground, which, by being thus fixed by the resistance it there meets with, becomes the fulcrum of the first movement. The extensor muscles of the limb are now exerted in giving the body an impulse forwards. As soon as this impulse has been given, the muscles which had been in action are relaxed, and the leg is raised from the ground, brought forwards, and laid down close to the fore foot of the same side. This fore foot is next raised and advanced; and then the same succession of actions take place with the hind and the fore foot of the other side.

"An attentive examination of the conditions of these successive positions will shew that, amidst all the changes which take place in the points of support, the stability of the body is constantly preserved. It is an elementary proposition in mechanics, that all that is necessary for ensuring the support of the body on any given base, is, that the vertical line drawn from the centre of gravity shall fall within that base. When the animal is standing, the feet form a quadrilateral base; and the centre of gravity is in a vertical line passing either through the centre of the base, or as, for the reasons already mentioned more frequently happens, through a point a little in front of the exact centre. At the time when the hind foot which began the action is raised from the ground, the centre of gravity, having been by this action impelled forwards, still remains above the base formed by the other three feet, and which is now reduced to a triangle. The hind foot being set down, while the corresponding fore foot is raised, a new triangular base is formed by the same hind foot, together with the two of the other side, which have not yet been raised. The centre of gravity is still situated above this new

triangle, and the body is consequently still supported on these three feet. The fore foot may now be advanced without endangering the stability of the body; and by the time the foot is set down, the centre of gravity has arrived above the centre of this new base. But at this moment the centre of gravity is again urged forwards by the other hind foot, which now comes into action, and repeats, on the other side, the same succession of actions, which are attended with the same consequences as before.

"In quick walking, it often happens that quadrupeds, particularly fast walking horses, raise their fore foot on either side a little before the hind foot comes to the ground: such horses are very liable to fall; but, generally speaking, the time during which the body is thus supported only by two feet is so short as not sensibly to influence the results.

"A *trot* may be considered as a succession of short leaps made by each set of feet diagonally; that is, by the right fore foot and the left hind foot; or, *vice versâ*, the one set being raised together a short time before the others have reached the ground; so that during that minute interval of time all the feet are in the air at the same moment; and during the remaining portion of the time, the body is resting upon the two feet placed diagonally with regard to each other. The undulations are here chiefly vertical, instead of lateral, as they are in the walking pace.

"A *gallop* is a continued succession of longer leaps made by the two hind feet in conjunction. In this case the centre of gravity is lifted higher from the ground, and is projected on a wide arch, and with great velocity."

We have thus followed the author in his description of the three paces, *walk*, *trot*, and *gallop*, being those most particularly interesting to veterinarians. Nature has purposely endowed different tribes with different capacities to execute progressive movements, by the variations she has introduced into the comparative lengths of the several parts of the trunk, and the size and mobility of the extremities. It would exceed our limits to accompany him farther on this subject, and we will proceed to another, viz.

Perceptions of Animals.

The more an organ of sense differs in its structure from those which we ourselves possess, the more uncertain must be our knowledge of its functions. We may, indeed, without any great stretch of fancy, conceive ourselves placed in the situation of the beasts of the forests, and comprehend what are the feelings

and motives which animate the quadruped and the bird; but how can we transport ourselves, even in imagination, into the dark recesses of the ocean, which we know are tenanted by multitudinous tribes of fishes, zoophytes, and mollusca? How can we figure to ourselves the sensitive existence of the worm or the insect, organized in so different a manner to ourselves, and occupying so remote a region in the expanse of creation?

Without venturing to speculate on the perceptions of the animalcule, whose world is a drop of fluid, and whose fleeting existence, chequered perhaps by various transformations, is destined to run its course in a few hours, we will confine our inquiries to the more intelligible intellectual phenomena displayed by the higher animals, where we can readily trace a gradation which corresponds with the development of the central nervous organ, or brain.

That the comparison may be fairly made, however, it will be necessary to distinguish those actions which are the result of the exercise of the intellectual faculties from those which are called instinctive, and are referrible to other sources. We will let the author speak for himself:—

"Innumerable are the occasions in which the actions of animals appear to be guided by a degree of sagacity not derivable from experience, and apparently implying a foreknowledge of events which neither experience nor reflection could have led them to anticipate. We cannot sufficiently admire the provident care displayed by nature in the preservation both of the individual and of the species, which she has entrusted, not to the slow and uncertain calculations of prudence, but to innate faculties, prompting, by an unerring impulse, to the performance of the actions required for those ends. We see animals providing against the approach of winter, the effects of which they have never experienced, and employing various means of defence against enemies they have never seen. The parent consults the welfare of the offspring she is destined never to behold; and the young discovers and pursues without a guide that species of food which is best adapted to its nature. All these unexplained and perhaps inexplicable facts we must content ourselves with classing under the head of *instinct*, a name which is, in fact, but the expression of our ignorance of the nature of that agency of which we cannot but admire the ultimate effects, while we search in vain for the efficient cause."

In all the inferior orders of the animal creation, where instincts are multiplied while the indications of intellect are feeble, the organ which performs the office of the brain is comparatively small. The sensitive existence of these animals appears to be

circumscribed within the perceptions of the moment, and their voluntary actions have reference chiefly to objects which are present to the sense. In proportion as the intellectual faculties of animals are multiplied, and embrace a wider sphere, additional magnitude and complication of structure are given to the nervous substance which is the organ of those faculties. The greater the power of combining ideas, and of retaining them in the memory, the greater do we find the development of the cerebral hemispheres. These parts of the brain are comparatively small in fishes, reptiles, &c., and the greater number of birds; but in the mammalia they are expanded in a degree nearly proportional to the extent of memory, sagacity, and docility. In man, for instance, in whom all the faculties of sense and intelect are so harmoniously combined, the brain is not only the largest in its size, but, beyond all comparison, the most compli-cated in its structure. A large brain was bestowed on man evidently with the design that he should exercise superior powers of intellect; the great distinguishing features of which are, the capacity for retaining an immense variety of impressions, and the strength, the extent, and vast range of the associating principle which combines them. Yet the lower animals also possess their share of memory and of reason.

This, we confess, is a favourite study of ours;—we have more than once written on the subject in THE VETERINARIAN; and it is with pleasure that we discover that the author's ideas coincide with our own.

"The lower animals," he says, "possess their share of memory and of reason; they are capable of acquiring knowledge from experience; and, on some rare occasions, of devising expedients for accomplishing particular ends. But still this knowledge, and their efforts of intellect, are confined within very narrow limits; for nature has assigned boundaries to the advancement of the lower animals, which they can never pass. If one favoured individual be selected for a special education, some additional share of intelligence may, perhaps, with infinite pains, be infused; but the improvement perishes with that individual, and is wholly lost to the race. By far the greater portion of that knowledge which it imports them to possess is the gift of nature, who has wisely implanted such instinctive impulses as are necessary for their preservation. Man also is born with instincts; but they are few in number compared with those of the lower animals; and, unless cultivated and improved by reason and education, would, of themselves, produce but inconsiderable results. That of which the effects are most conspicuous, and which is the foundation of all that is noble and exalted in our

nature, is the instinct of sympathy. The affections of the lower animals, even between individuals of the same species, are observable only in a few instances; for, in general, they are indifferent to each others' joys or sufferings, and regardless of the treatment experienced by their companions. The attachment, indeed, of the mother to the offspring, as long as its wants and feebleness require her aid and protection, is as powerful in the lower animals as in the human subject; but its duration, in the former case, is confined, even in the most social tribes, to the period of helplessness; and the animal instinct is not succeeded, as in man, by the continued intercourse of affection and kind offices, and those endearing relations of kindred which are the sources of the purest happiness of human life."

We must here take leave of our author for awhile, and at some other period will introduce him to our readers on a different subject. In conformity with the original purpose of the work, he has throughout excluded from it all those particulars of the natural history of animals and plants, and all description of those structures of which the relation to final causes cannot be distinctly traced, and admitted only such facts as afford manifest evidences of design. He has likewise confined himself to such subjects as are adapted to every class of readers; and, avoiding all unnecessary extension of the field of inquiry, has wholly abstained from entering into historical accounts of the progress of discovery, contenting himself with an exposition of the present state of the science. K.

TO CORRESPONDENTS.

Mr. H.—An abscess exists either in the vagina, or in the lower portion of the urethra; probably the former. Would not an injection of a diluted solution of the chloride of lime into the vagina, and continued daily for a fortnight or more, be likely to be serviceable?

A Member of the Veterinary Profession.—The medicine was received. It has been tried—certainly in a very favourable case, for it was the very commencement of a sudden attack: the most fearful symptoms seem to be disappearing.

A portion of it has been sent where our correspondent wished that it should find its way, and a promise was given that its efficacy should be tested.

Half-a-dozen Correspondents.—It is not the hour, but the time will come.

Paul Pry shall appear in our next, and he may be sure that he "don't intrude."

Cases have been received from Messrs. W. C. Spooner, Sinclair, Cleland, and an anonymous correspondent; but our number was then made up.

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MR. YOUATT'S VETERINARY LECTURES,

DELIVERED AT THE UNIVERSITY OF LONDON.

LECTURE XLV (continued).

Hydrocephalus.—Congenital.

ANOTHER cause of compression of the brain is the presence of an unnatural quantity of fluid, either between the arachnoid membrane and the dura-mater, or beneath the arachnoid, or in the ventricles. It is oftenest congenital, and much more frequent in the calf than in the foal. In congenital hydrocephalus, the fluid is usually between the membranes; and it exists in so great a quantity, and enlarges the cranium to such a degree, that parturition is difficult, and it is generally necessary to destroy the progeny in order to save the mother. M. Taiche relates a case, in the *Journal Pratique*, in which a calf was born with an enormous tumour on the anterior and inferior portion of the frontal bone. The young animal was weak, and it staggered as it walked; but it sucked heartily when it was held to the teat and its head supported. The tumour evidently contained a fluid. M. Taiche punctured it, and two pints and a half of limpid fluid escaped. After the operation, the calf walked of its own accord to its mother, held up its head for the first time, and sucked its fill. During the first three days it seemed to be doing well; but then bloody pus began to flow from the wound, and on the seventh day a very unpleasant smell proceeded from it; the animal refused to suck, lay with its head extended, and breathed with difficulty. On the following day tetanus supervened, and the poor beast was destroyed. The left side of the cranial cavity was considerably larger than the right; the walls of the cranium on that side seemed to have been long and forcibly compressed; two-thirds of the anterior wall of the lateral ventricles had disappeared, but the rest of the brain was well formed and sound.

Here is the cranium of a calf that was born with water in the head. It died on the second day. There is no distinct and sepa-

rate enlargement, but the whole of the cranium seems to be forced outward and with strange deformity. This, however, is a very rare disease.

Hydrocephalus, if not congenital, seldom attacks the young Animal.—I never saw a case in which water in the head accumulated in a young animal that was born healthy, nor do I believe that there is one upon record. This is very singular, considering how many infants and children fall victims to this disease. It is a circumstance for which I am unable to account, except that the different state of the skull in the infant and the quadruped may exert considerable influence on the progress, if not the origin, of the disease. In the infant none of the bones of the skull are perfectly formed. In some of them the process of ossification has scarcely commenced. Few or none of the sutures are closed, and the fontanel or chasm at the meeting of the coronal and sagittal sutures long continues open. If, from certain causes, inflammation should be established in any part of the brain or its membranes, and the effusion from the exhalent vessels consequent on this should commence, the cavity of the cranium readily enlarges as the fluid pours out, and offers little resistance to its accumulation. In the quadruped, however, exposed to dangers from which the helplessness of the infant exempts him, the brain has a firmer covering; the process of ossification is much farther advanced; the sutures have closed; the fontanel never had existence, or is obliterated; the cranial cavity is incapable of enlargement, and when the process of effusion commences, that pressure on the exhalent vessels takes place which is the most effectual restraint on their inordinate action.

Some medical practitioners have resorted to compression in chronic hydrocephalus, and they have imagined with advantage; but the grand difficulty has consisted in rendering that pressure perfectly equable, and being enabled to apply it before the habit of effusion was established, and when alone it could be arrested with safety, or arrested at all. Nature has here contrived a uniform and seemingly effectual resistance to the accumulation of the fluid.

The diminished size of the brain itself in the quadruped; the preponderance of that part of it, the medullary substance, which, although it may suffer from the pressure, is little concerned in the production of the fluid; and also the lack of the cortical or cineritious portion, in or about which the effusion takes place,—these things may have effect in preventing in the quadruped a disease so fatal in the human being.

Accumulation of Fluid in the Ventricles.—In the adult animal,

however, whether horse or ox, the effects of compression of the brain from effusion of fluid in the lateral ventricles occasionally come under our notice. This resembles, and sometimes very closely corresponds with, serous apoplexy in the human being. I know not the symptoms which, during the life of the animal, are to guide us in distinguishing between serous and sanguineous apoplexy, except perhaps that in serous apoplexy the progress of the disease is slower, and the symptoms are of a milder character.

Case of Serous Apoplexy.—Observe these enormous plexus choroides. They are quite as large as an almond with the shell upon it. This belonged to a horse that died of serous apoplexy. From a high-spirited, free-working animal, he had gradually become a mere slug; and he had more than once stood suddenly still while on a journey, as if threatened with an attack of megrims; but he had never fallen or been decidedly convulsed: he had likewise very rapidly been losing condition. He was found one morning with his head leaning against the manger, and supporting the greater part of his weight. He was unconscious of surrounding objects, heard not when spoken to, and there was no winking when the hand was moved immediately before his eyes, the pupils of which were dilated. The pulse was scarcely perceptible, but much quickened. On being moved backward from the manger, he fell, but immediately scrambled up again, and stood staggering and balancing himself. The respiration was laborious, the Schneiderian membrane intensely red, and a frothy fluid dropped from the mouth. He was bled until he began to blow, and a dose of physic was administered. Consciousness was partly restored, but he still persisted in leaning against the manger, and refused all food. A servant was desired to sit up with him, but he deserted his post, and the horse was found dead early on the following morning.

Post-mortem Examination.—There was not the slightest trace of inflammation in any part of the brain, but the lateral ventricles were filled with a yellow serous fluid, to the amount of at least six ounces, and in which the plexus choroides seemed to be raised from their beds and to swim. The arch of the fornix was evidently elevated, making, as it were, one continuous ventricle of the two; and the fourth ventricle was fully as much distended as the lateral ones. The lungs were congested with blood, and traces of inflammation appeared through the whole of the intestinal canal.

Here are enlarged plexus choroides, which were found in the brain of another horse that came into my hands for the purposes of dissection. Of the history of the disease I know nothing.

The plexus choroides are even more enlarged, and the fluid of a serous character was as abundant. I suspect that serous apoplexy is no unfrequent disease in over-worked and half-starved horses; but our post-mortem examinations have usually been too carelessly and superficially conducted: very rarely are they extended beyond the few minutes that a trifling bribe will delay the departure of the knacker's cart. We sadly need reformation here.

Enlargement and Pressure of the Plexus Choroides not always injurious.—I perfectly recollect two cases during my attendance at the Veterinary College, and my yet more diligent attendance at the knacker's yard—(the latter, gentlemen, is a place which I trust you will never frequent for the diabolical purpose of torturing a poor condemned and miserable animal, but where you may occasionally gain a clearer insight into the nature and progress of disease than the lectures of the most talented instructor can afford you). There were two horses that had exhibited no apparent cerebral affection, yet in whom the plexus choroides were even larger than in the specimens before you. In one horse in particular they were as large as pullet's eggs; but they were rather sarcomatous tumours attached to the plexus, than an actual agglutination and enlargement of that congeries of vessels. The larger portion lay on the corpora striata, and flattened them and left their impression upon them, but there was no collection of fluid in the ventricle.

Professor Rodet relates a case in which the tumours completely occupied and filled the ventricles, and also pressed chiefly on the corpora striata, and produced a softening of the cerebral substance; there was not any nervous affection or impairment of intellect. The main pressure, however, in these cases, was on the anterior portion of the base of the brain; and it would have been a point of interest to have ascertained whether the sense of smelling was affected. In effusion of fluid into the ventricles, the pressure is over the greater part of the base of the brain; and, owing to the communication between these cavities, reaches even to the medulla oblongata; and hence, probably, the stupidity and loss of voluntary power which I have described.

Determination of Blood to the Brain.—There has been some dispute among human pathologists as to the compressibility of the cerebral substance. It has been supposed accurately to fill the cranial box, so that there can never be any material variation in the quantity of blood in the brain. The incompressibility of the cerebral mass I may not be disposed to dispute; but the perfect occupancy of the cranial cavity I am much inclined to doubt The elastic cellular substance about all the bloodves-

sels, and within and about the sheaths of all the nerves, and the base of the brain generally, cannot be mistaken, and may be compressible to a very considerable extent. I can see the utility and the necessity of this when I recollect the great quantity of blood which permeates the brain in a state of health, and which is so liable to be increased by many accidental circumstances. The structure of the longitudinal sinus, and the bands by which it is connected with the pia mater, force on me the probability, or rather the actual existence, of occasional dilatation and contraction; and the cellular substance about the rete mirabile was placed there, by its yielding resistance to guard these important vessels. While, therefore, I could account for all the symptoms of apoplexy on the principle of the supposed incompressibility of the brain—while I could imagine that the presence of a little more blood in the arterial vessels would render the venous ones impervious; or the loitering of the blood in the veins would close the arterial vessels, and thus prevent the circulation of the blood through the brain, or produce injurious pressure on the nervous origins (for the rupture of a vessel and the extravasation of but a small portion of blood would be followed by very serious effects) yet the inspection of various brains of horses that have died of staggers, or phrenitis, has forced on me the fact, that a considerably greater quantity of blood is sometimes found in the cranial cavity than at other times; and therefore the next class of diseases which I shall notice will fall under the head of

Congestion of Blood in the Brain.

Not necessarily connected with Inflammation.—If I ride a plethoric horse far and fast, and especially on a warm day, I shall probably have congestion of the lungs without inflammation of those organs. They, and the respiratory apparatus generally, are over-worked in supplying the arterial blood which this excessive and unusual muscular exertion requires; and at length become so exhausted, that they can no longer contract on the blood which they contain. *The horse is blown.* Give a little time for rest and reaction; hasten that reaction by proper stimulants, and the vessels gradually relieve themselves of the load which oppressed them: but, hurry the animal after he has exhibited symptoms of distress, or complete the exhaustion by immediate and unskilful bleeding, and he dies, and affords you a specimen, pregnant with instruction, of most extensive congestion, independent of inflammation. So, occasionally, when we ride a fat and pursive horse a little beyond his usual speed, he evinces temporary distress clearly not referrible to the respiratory system:—he suddenly staggers, and threatens to fall. We have caused the blood to flow

with greatly increased velocity through the lungs, in order that the requisite supply of arterial fluid should be furnished; and if through the lungs, likewise through every other part of the frame, and the brain among the rest. The arteries supply it more rapidly than the veins can carry it off; the distention of the arteries, perhaps, causes compression of the veins; and hence the circulation is impeded, and there is greater or less pressure on the origins of the nerves.

Megrims in the Horse.—I add to this another cause of congestion of blood in the brain. I am *driving* my horse; the collar is probably a little too tight,—it presses on the jugular vein, and prevents the free return of the blood from the head. What is often the consequence of this? Why, the animal begins to go a little sluggishly: I, perhaps, take no notice of this, or, not attributing it to its proper cause, urge him to his former speed. Presently afterwards he stops—stops sometimes as if he were shot—staggers, is deaf to my voice, and scarcely conscious of surrounding objects: he backs a little; the collar ceases to press upon his neck, and he recovers: he shakes his head, looks a little frightened, and goes on again, but with not quite so much spirit as before. This attack is strangely called the *megrims*.

A more aggravated Case.—Often, however, the matter does not end here. He begins to be unmanageable—he takes a sudden fancy to go round and round, and then he staggers and falls; or he falls at once; and according to the degree of congestion, or the relief that he may experience from the removal of the pressure of the collar, or other causes of which I am ignorant, he either lies insensible for awhile, or he begins to struggle most violently, or he quickly scrambles up again, frightened at what has happened, and afraid of my correction; and he goes on as if nothing was the matter, except that he is dull and languid. These cases are not unfrequent, and especially in sultry weather, and then the horse sometimes dies on the spot. Many a stage coach-horse is thus lost: it is the *coup-de-sang* as regards him.

This a State of Sanguineous Congestion.—When we have an opportunity of examining the brain in this case, no theoretical reasoning of the incompressibility of the brain, and the perfect fulness of the cranial cavity, and the impossibility of any material variation of the absolute quantity of blood in the brain, can deprive me of the evidence of my senses: we find actual accumulation of blood in the vessels of the brain—in the arterial vessels to a very great degree, but mostly in the sinuses or other venous canals: the membranes are all injected, and deeply so; and

even the vessels of the substance of the brain are in the same state; for, wherever the brain is cut, minute drops of blood follow.

Treatment.—Of apoplexy (determination of blood to the brain, and congestion there), without these immediate exciting causes, I shall speak in my next lecture: but the treatment of this sudden congestion is simple enough. Bleeding is the first step, and from the jugular vein, if a lancet or fleam is at hand, for thus we shall have the advantage both of general and local depletion; we shall lessen the quantity of blood flowing through the system, and we shall empty the overloaded, and distended, and probably debilitated, vessels of the brain. The owner of the horse frequently adopts the temporary expedient of cutting the bars of the mouth. If this is but effected deeply enough, and in a line between the central and second incisors, and about an inch behind them, plenty of blood may be obtained, and we shall also have the benefit of a general bleeding. The curb-rein should be loosened, and, if possible, the collar eased. The prudent man will guard against a repetition of this attack: he will have the collar permanently altered, so that it shall not press upon the jugular; he will place the horse on a somewhat restricted and mash diet; and he will take the first opportunity of administering a strong dose of physic. To this will follow occasional doses of alterative medicine, or, what is better, a run at grass.

Precaution.—Is all this necessary because a horse has happened to have a fit of the megrims? Yes, and more too, in the mind of the prudent man; for it is seldom that a horse has the megrims once, without having at least the predisposition to a second attack established. These over-distended vessels may be relieved for awhile, but it is long before they perfectly recover their former tone and strength. It requires but a little increased velocity or force in the vital current once more to distend them and to produce the same dangerous effects. The testimony of experience is uniform about this; and he would not do justice to himself or his family who trusted himself behind a horse that had had a second attack of megrims.

ON WOUNDS PENETRATING INTO THE CHEST OF THE HORSE.

EXPERIMENTS MADE WITH A VIEW TO ILLUSTRATE THEIR CONSEQUENCES AND THE PROPER TREATMENT OF THEM.

By MM. U. LEBLANC, *V.S.*, *and* A. TROSSEAU, *M.D.*

[Continued from page 584.]

5. *Simple wounds of the parietes of the thorax, with hemorrhage from an intercostal artery; the effusion of blood into the pleural cavity, with the introduction of air into the chest.*

IF after having produced an effusion of blood into the chest by dividing an intercostal artery, as was described in the last journal, a communication is established between the external air and the pleural cavity by means of a canula, not only the effects ordinarily produced by the agency of the air are observed, but others that are the consequence of the effusion of blood. The air mixes with a portion of the effused blood, and we hear, a little while after the introduction of the air, a spumous sound, if we may so call it, and the air almost always passes, although unequally, into both of the thoracic cavities. The animal under experiment feels much difficulty in breathing, his nostrils are dilated, and the alæ of the nose are curled, &c.; and we have constantly witnessed the death of the patient after this experiment, even although the communication with the external air did not last more than half an hour. In these cases, however, the communication with the air was constant, and had taken place through a canula a quarter of an inch in diameter. It is not the same when the passage for the air is narrower, and when the communication is only for an instant at a time, and interrupted, as is usually the case when wounds of this kind occur accidentally.

The air in the pleural cavity acts in this case not only by the pernicious agency which has been already described, but by its property of effecting an important change in the blood itself—depriving it of its life, if we may so express ourselves,—rendering it a foreign body, and thus preventing it from being absorbed as when there was no communication between the thoracic cavity and the external air. We see the mass of blood isolating itself in the pleuræ by means of false membranes, which envelop the clot either partially or entirely. The clot becomes changed—it speedily putrefies under the more disadvantageous circumstances, that is, when the communication with the air is permanent, or lasts a considerable time. The blood is of a black hue through the whole of its mass; then it becomes livid, assumes various colours on its surface, exhales a disagreeable odour, and begins to pu-

trefy. All the tissues with which it is in contact are stained of a deep red colour, and almost always pleurisy and pneumonia develope themselves in the neighbourhood of the altered mass.

In the greater part of the cases of actual practice, and of a practice of considerable extent, the consequences of communication with the external air are not so serious, and they differ materially according to circumstances; for we have remarked in the course of our experiments, and when studying the effect of wounds made with cutting instruments, that when the air had access only momentarily, the clot successfully isolated itself, and did not putrefy, and consequently could be absorbed in a greater or less length of time. Therefore it is that we are always so anxious to cut off all communication between the interior of the chest and the air without.

6. *Simple wounds of the parietes of the chest, with effusion of blood, a counter-opening, and the introduction of air.*

After having produced bloody effusion in the chest, by making the contents of a divided artery run into it, we have almost immediately afterwards made a counter opening at the inferior, and very lowest part of the chest. No blood flowed through this opening, the lips of which remained close to each other. We have then separated the edges of the wound by plunging a seton needle into the chest, and making the broad side of the needle perpendicular to the sides of the wound. It has not even then escaped, but only a few drops of a red liquid which was not pure blood.

This experiment was made at the abattoir of Montfauçon, where we were enabled to destroy the horse a quarter of an hour after the injection of the blood. We examined the cavity of the chest twenty-five minutes after the blood was thrown in. It was already coagulated—the clot was very large, flattened, and applied by its two surfaces against both the pulmonary and costal pleura. The coagulation had probably already taken place when the puncture was made, since the counter-opening was not followed by the escape of any blood.

The same experiment was made upon a horse which we destroyed six days after the injection of the blood, and after the introduction of some air through the counter-opening. We did not find any trace of the injected blood.

The introduction of the air did not in these experiments produce any marked effect, because, without doubt, the communication of the atmosphere with the cavity of the chest was only momentary, or of very slight duration.

We made another analogous experiment, by injecting into the chest six pounds of blood, which we had that instant drawn

from the jugular. A counter-opening was made ten minutes after the injection. Immediately after the puncture there issued a small quantity of fluid, highly tinged with blood, but it was not pure blood. We now separated the lips of the puncture, but there only issued from it a red serous fluid.

This horse was destroyed five or six hours after the injection of the blood. We found a clot at the inferior part of the pectoral cavity. It formed a mass which had pressed upon the lung, but it was not itself extended like a sheet over the floor of the chest, as in the former experiments, probably on account of the manner in which the blood had run into the pectoral cavity. In one case it had run gently, and had spread itself over a large surface; in another, it had been driven in rapidly, and in a few seconds, by the piston of a syringe; and it had escaped by a canula, the orifice of which was larger than the diameter of the intercostal artery. The form of the clot, and its situation among the surrounding parts, depends upon the manner in which the blood is injected into the pleural cavity, and, without doubt, also on the quantity of blood injected.

We have made a counter-opening immediately after injecting blood through a wound made in the superior part of the chest, and we observed that a very small quantity of blood issued from this counter-opening; although we even pushed back the lung with a sound, in order to keep the inferior wound free and open. The chest of this horse, killed a little while after the experiment, contained a great quantity of coagulated blood.

There are, then, many causes which prevent the escape of the blood through these counter-openings; the two principal are the prompt coagulation of the blood, and the obstacle produced by the lung itself pressing against the counter-opening, when air would otherwise find its way into the chest through the puncture. That ought not to astonish us, when we know that the lung can form a kind of hernia across a costal wound, and which proves that the lung is not a passive organ in the act of the entrance of the air during respiration. We have already had occasion to relate, that when a canula was introduced into the pleural sac, in spite of the introduction of air into the chest, the lungs dilated themselves to such an extent, as to rub against the extremity of the canula, and to become excoriated, in consequence of the friction at the time of inspiration.

ON THE FUNCTION OF THE FROG.

By Mr. J. Stewart, *Veterinary Professor at the Andersonian University at Glasgow.*

Professor Coleman and B. Clark, as every body knows, are our most, if not our only, valuable authors on the structure and functions of the horse's foot. Between these two gentlemen, it is said, that the frog prevents the horse from slipping; prevents the hoof from contracting; acts as a spring, by admitting of the descent of the sole; and preserves the tendon and navicular joint from external violence. I do not mean to deny that the frog performs these different offices. There can be no doubt that it does; and if I were to add, that it also fills up a certain space which would otherwise be vacant, no one could contradict it. But there is a difference between what a thing does, and what it was expressly designed to do.

The purpose for which I conceive the frog to have been intended, has never, as far as I know, been described. The view I have taken of its functions has been derived, not so much from dissections of the part, as from observation of what takes place in the foot of the living animal. Horses of large size, with long pasterns, and rather flat feet, may be plainly perceived throwing a considerable portion of their weight from the small pastern bone on to the upper and posterior part of the frog. All horses under certain circumstances do so; but it is most evident in those particularly alluded to, and especially when they are coming down hill heavily laden. If a large draught horse is shod with high-heeled shoes, the frog, in process of time, becomes remarkably prominent, the heels weak, and the coronet at the heels and quarters bulges over. The frog is fairly thrust downwards between the heels of the shoe, not by the descent of the navicular bone, but by that of the small pastern bone. If the horse is shod without calkins, the frog is then compressed between the ground below and the small pastern bone above; and the heels and quarters of the crust recede outwards. This, then, is the use of the frog. It is formed merely to act as a firm yet yielding point of support to the small pastern bone. This bone, it may be observed, has a considerable prominence at its upper and posterior part, by which it, in a manner, meets the frog half way. By such an arrangement, extent and freedom of motion and elasticity are conferred. The expansion of the heels and quarters of the crust is a necessary consequence of the circumstances under which the frog is placed. The sole, no doubt, has some influence; but, compared with that which the frog exerts,

it is very trifling. Indeed, I am not sure that the sole may not sometimes be brought down solely by the expansion of the crust, and quite independently of the descent of the coffin bone. Shoeing may make the one antecedent to the other; but in a natural state, the descent of the sole and the expansion of the crust should begin and end simultaneously.

Undue expansion, which is possible (though, having the contrary evil always before our eyes, we may be unwilling to admit it), is prevented by the horny bars. They sink into the ground, and, by their oblique direction, assist the crust in opposing an injurious degree of expansion.

The lateral cartilages, as far as the elasticity of the foot is concerned, might be wanting altogether. Their principal use is, to afford a bed for the coronary ligament and lamellæ. These parts could not, consistently with their function, have been adherent to so unstable a piece of matter as the sensible frog, which, by changing its form at every step of the animal, would have rendered the secretion of a smooth sheet of horn impossible, and have endangered the connexion between the secretion and the secreting body.

If this view of the functions of the posterior parts of the horse's foot be correct, it will, in many cases, influence our mode of defending diseased feet; and it will explain the cause of some diseases which are still very unsatisfactorily accounted for. How far it will do either, must, in the meantime, be left for others to determine: or, should leisure be found, I may again trouble the editors upon some future occasion.

THE CRAMP IN HORSES.

By M. Charles Prevost, *V.S., Geneva.*

Soleysel and Garsault, in their *Parfait Maréchal*, and Lafosse in his *Dictionnaire d'Hippiatrique*, have mentioned the existence of *cramp* in horses. Since the time of these old veterinary writers to the present day, no one has written anything new on this malady. Some modern authors have repeated that which was written before, without adding a single observation of their own; while others, and they the most numerous, have passed over in silence a disease which, nevertheless, is not rare in practice. This chasm in veterinary science has induced me to communicate to my colleagues a few of the cases of cramp that have come under my notice. Cramp consists in a sudden, involuntary muscular contraction: its duration is variable, and it attacks

chiefly the hinder extremities. In the human being cramps occasionally affect the muscles of organic life, as the sphincter of the bladder, the anus, &c. Buchan has given the name to a variety of gastralgia, in which there is a sudden and very painful spasm of the stomach. Although cramps of this kind may, possibly, exist in the horse, they have not yet been observed or described. I shall principally confine myself to those of the extremities: only mentioning the others in order to attract the attention of practitioners to them.

CASE I.

On the 25th of July, 1819, I attended an entire horse, six years old, that for twelve hours had had an immoveable stiffness of one of the hind legs. It had travelled from Lyons in the morning, had performed the journey well, and appeared to be in perfect health.

The animal rested equally on all his limbs—the temperature of the body and the respiration were natural—the pulse 38—the membranes presented nothing particular, except that the conjunctiva was slightly red, which might have been occasioned by the heat and dust—the vertebral column was flexible; in a word, the horse, seen at rest, appeared to have nothing the matter with him. When, however, he was made to walk, he went on three legs; the right leg, from the thigh to the fetlock, was so violently contracted, that it seemed as if it were all one piece: it inclined backwards; the point of the toe dragged on the ground, and, standing behind the horse, the sole was seen; when he was stopped, he was obliged to back a little in order to support himself on that leg. There was neither swelling nor tenderness of the limb: if the limb was slowly moved, either forward or sideway, the animal did not seem to suffer much pain; but if these movements were suddenly executed, the horse evidently suffered. The only difference in the appearance of the leg was, that the muscles seemed to be hard and stretched.

In despite of the most diligent search, I could not discover any cause of this affection. Should I say, with Garsault, that cramp proceeded from thick blood embarrasing and arresting the circulation of the animal spirits through the muscles; or with Lafosse, that from some impediment in the circulation, the blood passed upon the nervous fibrils? I could not determine: I only saw that the cramp endured longer than I had ever before thought possible, and I could form no opinion as to the result.

Before I arrived, the proprietor had had the affected limb well rubbed with a wisp of straw, and had used frictions of camphorated spirit. I advised him to continue this treatment, to give

the animal only half his allowance of hay, no oats, and water whitened with oatmeal to drink.

On the following morning, the horse being no better, the proprietor added some spirits of turpentine to the camphorated tincture, but which so irritated the skin, and caused so much pain, that the animal refused to eat. When I saw the animal the temperature of the body was raised—perspiration was breaking out in several places—the pulse was 49—the limb was swelled, hot, and painful; and a serous fluid was exuding through the pores of the skin. This state of the limb, which was the evident consequence of the irritating frictions that had been applied, did not at all diminish the muscular contraction. It was necessary to adopt a more soothing kind of treatment, in order to abate the irritation and inflammation. The horse was bled, the limb fomented with an infusion of elder flowers, and then embrocated with a liniment composed of olive oil, camphor, and opium.

Thirty hours after this, there was a marked diminution of the intensity of the symptoms: the limb was then embrocated with a soap liniment, and the stiffness gradually wore off. The soap liniment seemed to be particularly beneficial.

On the 3d of August the horse returned to his work; but the use of the soap liniment was continued for some days afterwards.

CASE II.

On June 8th, 1822, I was consulted respecting a thoroughbred English horse, whose right leg was affected with cramp. When the animal was standing still, the weight of the body seemed to be equally supported by all the limbs; but when he moved, he walked on three legs only, and dragged the other leg after him, the whole of which seemed to be completely stiffened. At the fourth or fifth step, however, he began to rest lightly upon the point of the toe; at the tenth or twelfth he could put his foot flat on the ground: the lameness continued to diminish, and, when he had gone twenty or thirty paces, it had quite disappeared. He was then (although he was urged at the rate of twelve miles an hour, and that through a long journey) no longer incommoded by this cramp, which, at his first starting, seemed as if it would have rendered him useless. No part of the limb presented any heat, swelling, or tenderness.

The same oil, camphor, and opium liniment was applied without effect: one composed of soap, camphor, and spirit of wine, was then resorted to, and was alike useless. We then had recourse to bandages firmly applied about the hock. They were

put on two or three hours before the horse was wanted, and they very materially lessened the lameness: it disappeared before the horse got out of the stable. The proprietor continued afterwards to use the bandage on this horse, and with the same beneficial result.

CASE III.

In October 1823, I attended a Wurtemburgh mare, six years old, that had cramp in her left hind leg. It was only perceivable when she first went out of the stable, and it disappeared when she had gone thirty or forty paces. When standing in the stable, she appeared to bear equally on all her legs; but when she began to move, she dragged the lame leg after her, and hopped three or four paces, during which a decided stiffness in the motion of the hock could be observed; then the symptoms all disappeared, in order to return after one or two hours' rest. No exterior lesion could be discovered, but each examination more and more convinced us that the hock was the seat of lameness.

We applied the camphorated opiate friction—then the soap liniment—after that camphorated spirit—then tincture of cantharides—and, finally, we blistered the hock, but without the slightest benefit.

CASE IV.

August 6th, 1825, I saw a little Hungarian mare with cramp in the left hind leg. As she went out of the stable she dragged that limb behind her, and there was evident stiffness extending from the thigh to the fetlock: she dragged the whole of the fore part of the hoof on the ground. After she had hopped along some paces, she, too, began to rest, first on the point of the toe; then she placed her whole foot on the ground: afterwards the lameness gradually lessened, but a stiffness remained, which by degrees disappeared, and when she had gone forty or fifty paces she was quite sound.

We used the opiate, and the stimulating embrocations, without effect, and at length dismissed her as incurable.

In September 1828, I visited her again: she was decidedly and permanently lame, and there was an osseous tumour on the inside of the hock, known by the name of curb. (*Courbe*—Qy. *Eparvin, see* Spavin, Edit.) On her coming out of the stable, the leg was stiff; but she did not drag it, nor rest upon the toe, as at my first visit. After exercise of an hour or more, the lameness remained, but a little changed in its character: the side of the croup, answering to the lame leg, gave way and sunk at

every step, and the limb was carried more slowly forward than in its natural state.

We applied successively mercurial ointment, tincture of cantharides, and blistering ointment, but without avail. The animal was finally condemned as unfit for work.

It would be interesting to know whether the cramp had produced the curb: the cessation of the muscular contraction after the appearance of the osseous tumour would render this probable.

CASE V.

November 12th, 1826, I attended on a Swiss horse, four and a half years' old, who, since he had taken a cold bath in the Arve (a river which has its source from the Glaciers), had cramp in the left fore leg. In the stable, as in the other cases, the weight of the body seemed to be equally distributed over all the legs; but when he began to move, he dragged this limb. After six or seven paces he began to press on the toe, the limb still being inclined backward; but the limb gradually regained its natural position, the muscular contraction diminished, and, having gone about fifteen paces, the lameness had quite disappeared.

The account given by the coachman rendered it probable that the disease had been produced by sudden suppression of the perspiration; and I, therefore, ordered the leg to be well rubbed four times every day with flannels dipped in hot oil, and, after each inunction, irons moderately heated were passed over the limb. This treatment was continued six or seven days; and only a very trifling abatement of the complaint having been produced, the oil, camphor, and opium, were resorted to, which entirely removed the cramp. During seventeen days the animal did his work well; but on the 18th day the cramp returned, without warning or apparent cause. The same means were applied, and the animal again did well for twenty-six days. On the 27th day the cramp again attacked him, and was once more easily got rid of by the same liniment. The owner was now tired of all this, and sold the horse.

CASE VI.

April 5th, 1828, I visited a mare, six years old, lame in the right hind leg. She also stood apparently well on her four legs in the stable, but on being moved limped on three legs, dragging the fourth after her: but the lameness did not go off on exercise. The camphorated opiate liniment was used, and on the following day the lameness disappeared; the mare returned to her work, and continued free from lameness thirty-three days. On the thirty-fourth day she again became lame, and once more the

lameness yielded to the liniment. Six weeks afterwards, she was once more attacked, and once more relieved; and during two years she was regularly seized with the cramp, once in every month or six weeks, until at length her owner, tired out, got rid of her.

CASE VII.

In November, 1830, I was sent for to castrate a four-year-old colt, the produce of a Barb horse and Hungarian mare. The operation was performed in the uncovered way, and no accident or unpleasant symptom occurred. Twenty-five days afterwards he was briskly exercised in the riding school. On the following day I was told that he could not move, and that the left leg behind was as stiff as a bar of iron. On arriving at the stable, I found that he was affected with cramp: from the croup to the fetlock the muscles were contracted, swelled, and tender: the animal limped on three legs, and drew the lame one after him in such a way that even the coronet dragged on the ground. He fed well, and was full of spirit.

The camphorated opiate liniment was used, and the lameness disappeared. Soap, camphor, ammonia, and spirit of wine, were then rubbed in, in order to strengthen the limb. Fourteen days afterwards he was as bad as before; he continued so during five days, when I was sent for. The malady yielded to the friction as readily as before, and the horse continued sound. I have seen many other cases of this affection, which it is needless to relate at length. A horse, six years old, always had the cramp in the left hind leg after a few hours of rest, but it disappeared when he had gone five or six paces: and another, as long as he lived, had it in the right hind leg; but it went off after a few hours' exercise.

Reflections.—As I have already stated, some veterinarians have spoken of the existence of these cramps. An old and estimable practitioner, M. Sylvestre, who, during many years, exercised his art with success at Geneva, often observed them, and was accustomed to remove them by frictions, dry, spirituous, or irritating, and, oftenest of all, by exercise.

There appear to be three kinds of cramp: 1st, Those which appear after rest of greater or less duration, and which last only a few instants; 2d, Cramps which last some days, and do not return; and 3d, Those which return at uncertain intervals, and continue some minutes or some hours, and that may be called periodical cramps. This last variety of the disease is the most frequent.

It would be interesting to determine, whether the causes of

cramp can be divided into idiopathic and symptomatic; whether they could be traced to stoppage of the circulation—forcible extension of the limb—false position of it—compression—contusion, or wound of a nervous filament; whether cramp could be traced to lesion of the cerebral substance—to spinal affection, membranous or nervous—and why the hind limbs are so much more subject to it than the fore ones.

I think that, by paying more attention to this malady, we should be enabled to add to the facts which I have narrated, and to give a satisfactory answer to the above queries; and also place the subject of cramp in its proper situation in the nosological table.

Journal, 1833, p. 71.

How much light might some of our brother practitioners (and to one in particular we allude) throw on this obscure, not always spasmodic, but, in most instances, hock-lameness! It will also be interesting to compare this memoir with the narration of some supposed or real cases of dislocation of the patella.—EDIT.

DIVISION OF THE FLEXOR TENDONS.

By Mr. W. C. SPOONER, *V.S., Winchester.*

IN the course of the last twelve months there have been many cases of "division of the flexor tendons" detailed in THE VETERINARIAN*, but as there is no case in which the operation has been performed on both legs, I will proceed to narrate one that has come under my notice; but before I do so it may, perhaps be as well to say a few words of the effects of the operation, and the nature of the disease for which it is put in requisition.

Overshooting of the fetlock joint appears to arise most commonly from a chronic inflammation of the flexor tendons, particularly of that portion immediately below the knee. As an inflamed tendon causes much less pain in a flaccid than in a tense state, the animal is induced to flex the limb when at rest, and, in the course of time, the tendon becomes considerably shortened; the horse goes on his toe, and is rendered useless. On division of the sinews, they separate for the space of an inch, and the leg is easily restored to its natural position; granulations are thrown out on the divided ends, and in a short time an union takes place, accompanied with an elongation of tendons, which can be

* It is rather singular that nine cases out of ten should occur in North Britain: is there any thing in the breed of horses there used, or the mode of working them, that makes them more disposed to contracted sinews?

regulated by the form of shoe adopted during the healing process. It is astonishing in how short a period this junction again takes place; but it is some time before the new substance becomes tendinous in its nature, or is capable of performing properly the office of a tendon. The object Nature has first in view, is to unite the parts; this is accomplished by granulations, which remain for some little time extremely vascular and weak; but when the first object is obtained, the new substance gradually accommodates itself to its destined function, and acquires the firmness and structure of tendon. It must, however, be plainly perceived, that by this process, the two sinews, the perforatus and perforans, become incorporated together at this place of union, and ever afterwards (like the Siamese twins, if the simile may be allowed) are precluded from acting independently of each other: the os pedis cannot be flexed on the pasterns, unless the pasterns are at the same time, and in the same degree, flexed on the metacarpus; and the horse becomes unable, of his own accord, to present the sole of the foot in a supine or inverted position: this, though of minor importance for slow draught, is of sufficient consequence, in my opinion, to preclude the animal from ever being put to fast work. There is another circumstance connected with the operation that has not been pointed out; but it strikes me that, as the tendons are generally in a state of chronic inflammation at the time the section is made, much benefit must arise from the fact of putting them in a state of *absolute* rest for a considerable time. The unsuccessful case related by Mr. Holford, in March last, by no means shews the inutility of the operation; for his horse should have been put to agricultural or other moderate work to have given it a fair chance; and it is by no means surprising that the animal became lame when put to the most trying of all draught, on the banks of a canal: and besides this, as the lameness was first caused by a kick, and was so severe that blistering and firing afforded no relief, is it not extremely probable that the original injury was the cause of the return of the lameness? Mr. H. should have said whether or not the part operated on failed—whether, in fact, the new connecting substance became painful and inflamed; for if not, the operation could not have been the cause of the failure.

CASE.

In the latter part of December, an old black horse was given me, for the purpose of experiment, by Mr. Caiger, coach-proprietor, of Southampton. He had been working in a coach for years, and for some time past had been gradually getting more

upright, until, at length, the fetlock became so overshot that he was rendered quite useless, and was condemned to the dogs. He had not been in work for upwards of two months, and for the last three weeks he had been at grass, where the leg had become worse, and from the inconvenience he had in reaching the ground, he was nearly starved. He was brought with difficulty seven or eight miles, going completely on his toe, and occasionally tumbling over on his fetlock. On the 30th December, I divided the tendons: the part was dressed as a common wound; and in about seven weeks, as he walked pretty well, I lent him to a neighbour to work in a cart. Here he continued for about six weeks, occasionally working hard on bad roads, when he became lame of the other leg (which, however, was rather upright before). He was worked a fortnight after this. The near leg stood sound, but the lameness in the off leg, and the pain and swelling of the tendons, increased, and he became nearly as overshot as he had been on the near leg. Wishing to try the effect of dividing the perforatus alone, I did so, and it enabled me to put the limb sufficiently straight; but the animal stood in much pain, and I found, in the course of a few days, that the joint was again becoming perpendicular, from being rested. I therefore, before the wound closed, divided the perforans. In so doing, I found the substance of the tendon quite red, and it bled freely, shewing that, in an inflamed state, the sinews are abundantly furnished with red blood. The horse was much longer recovering the use and strength of the off, than he had been of the near leg, arising, I imagine, from the parts having been more actively inflamed. I kept him for about ten weeks, and then sent him a distance of 45 miles, where he was turned out for a month, and then taken to plough. At this work he has continued for the last nine weeks, working every day. I saw him about three weeks since, and found the legs quite firm, and free from all inflammation.

EXTRACTION OF A FORK FROM THE ABDOMEN OF A DOG.

By M. Norrit, *V. S.* 14*th Chasseurs.*

On the 18th of October, 1833, a large hound, belonging to M. Terris, Professor of the College of Libourne, swallowed a bone, which stuck at the upper part of the œsophagus, at the back of the pharynx, and caused violent efforts by the dog to get rid of it. M. Tessier vainly attempted to make it descend into the stomach, by pressing with his hand in a direction from

above downwards, on the tumour which it formed externally. He at length opened the gullet of the dog and forced it down with the point of a fork. The animal was no sooner freed from the horrible torture it suffered, than its motions expressive of joy could not be restrained, and the fork, which was yet entangled in the pharynx, escaped from the hands of M. Terris, and followed the bone into the stomach.

During that day he did not appear to be in the slightest degree inconvenienced; but on the following day he was out of spirits: he stood with his legs wide apart, and he moved with pain and difficulty. On examining the belly, M. Terris felt the fork in a direction nearly across the abdomen, and parallel with the great curvature of the stomach.

These symptoms continued during that day and the following one; but on the 21st the dog had regained his usual spirits and appetite, and continued apparently well for about two months. The fork was now parallel with the length of the body, which direction it had taken on the fourth day.

One day, M. Terris endeavoured, mechanically, to accelerate the passage of the fork through the intestines; and, ascertaining its exact situation, he endeavoured to push it backward. When he had thus forced it as far as he could, he introduced two of his fingers into the anus, and seizing it by the handle, he drew it an inch out of the anus*; beyond this he could not bring it, without cutting into the rectum and disengaging the fork from every thing that retained it. This operation appeared to be too serious, for M. T. loved his dog, and would not expose him to the pain and hazard of such a process; he, therefore, gently returned the fork to its former situation. The dog was dispirited during the remainder of the day, and vomited about three pounds of blood. Every unpleasant symptom, however, disappeared, and the dog seemed to enjoy himself as usual during the next ensuing six weeks.

In the beginning of February (three months and a half after the accident) the dog suddenly appeared to be ill; he was dull, and expressed considerable pain when the belly was pressed upon. These symptoms rapidly increased, and in about twelve days the strength of the dog was exhausted—he was worn to a skeleton: he evidently suffered much, and death seemed to be approaching. M. Terris applied to several veterinary surgeons, but they all declined the operation of the extraction of the fork, believing that it would, of necessity, be fatal. At length, M. Nicolas Bettinger, and myself saw the dog. He was in the following state:—

* We scarcely understand this.

He was exceedingly depressed, very thin, lay constantly at his length to avoid flexing the belly, and slowly, and with hesitation, answered the commands of his master. The points corresponding with the situation of the fork being pressed upon, he evinced great pain; the pulse was small and quick, and the mucous membranes pale.

The fork had for some time occupied a situation in nearly the centre of the abdomen, and in a direction parallel with the length of the body; but in what portion of the intestinal canal it was contained, or whether it had perforated the stomach or intestines, and fallen into the cavity of the abdomen, we were unable to ascertain. We determined, however, to cut into the abdominal cavity, as the only means of relieving the sufferer.

Having shaved off the hair, I made an incision on the right flank, through the skin, about three inches in length, and in a direction from above below, and from before backwards. I then cautiously divided the muscular, and next the peritoneal coat beneath. Then laying aside the bistoury, I drew a part of the floating portion of the large intestines from the abdomen, and which would probably have incommoded me in the after part of the operation, and introducing my fingers into the incision, I seized the fork, which was free as far as the middle of it among the intestines, and I cautiously drew it to the opening that I had made in the flank. The other half of the fork was enveloped, and tightly grasped by the origin of the mesocolon, which was red and engorged. Drawing it with moderate force towards me, I attempted in vain to disengage the fork, and was compelled to have recourse to the knife. I slid the back of a very narrow bistoury along the fork to the base of its prongs, and drawing it back, I cut through all the tissues that retained it, and thus drew out the fork with the greatest ease.

The dog, during the operation, vomited some soup that it had taken in the morning, and also struggled violently, causing a great portion of the large intestines to protrude and retract through the wound, and admitting a great deal of air into the abdomen. There was very little bleeding; the intestines were all returned to their natural situation, and the wound closed by the *suture du pelletier**. The half of the fork which was free

* This kind of suture is used for wounds in the stomach or intestines, or the walls of the belly. The edges of the wound are brought together; one end or angle of the wound is held by the operator, and the other by an assistant, and then, by means of a round needle and proper thread, and in the manner that a housewife would sew or *whip* together two seams, the wound is closed. Three or four inches of thread are left at the first stitch, and the same at the last one: these two ends are then tied together, and left without the wound.—EDIT.

was covered partly by a thin and smooth brown deposit, and partly by oxide of iron irregularly deposited: the prongs, which had been enveloped in the mesocolon, were oxidized through their whole extent; and in many places were eaten deeply into, with many grooves, more or less marked, and running parallel with the length of the fork.

M. Nicolas now took charge of the dog: he kept him low, and administered emollient injections. There was some fever, and swelling of the lips of the wound, and hot and painful enlargement of the genital organs. On examining the wound five days afterwards, the stitches had given way, and a considerable quantity of pus was found between the integument and the muscular parietes of the belly, the incision through which was already closed. Other stitches were passed through the integument, but they also gave way two days afterwards, and the wound was then abandoned to Nature and to the dog, who was continually licking it, and who thus kept it in a healthy state. The swelling of the penis and scrotum diminished, and, twenty days after the operation, not only was the wound healed, but the patient had began to acquire condition. No pain was expressed when the parts of the belly which had been occupied by the fork were pressed upon. The dog was used again as before, and had not lost one of its good qualities.

At the time of the operation the fork was no longer in the intestinal canal. It had probably perforated the stomach, and escaped into the abdominal cavity about the third day after the accident, and when the animal evinced such decided symptoms of amendment: it then became entangled in the mesocolon, where it remained until the operation. The attempt of M. Terris to force it along, produced some laceration or other injury, evinced by the temporary illness of the dog, and the vomiting of blood. It is also evident, that the fork would never have escaped from the abdomen by any effort of Nature, but would have eventually destroyed the dog.

Rec. de Méd. Vét. **1834.**

EXTRACTS FROM MY CASE BOOK.

By Mr. W. Simpson, *V.S., Southampton.*

No. XII.

Inflammation of the mucous Surface of the Intestines, with Metastasis to the Heart and Lungs.

October 11, 1834.—The patient is a pony, belonging to R. T. Parker, Esq. Cuerdon Hall, very fat, a pet, and consequently unaccustomed to any thing like hard work; in fact, its chief employment consists in drawing a light vehicle about the grounds and neighbourhood, driven by its mistress. It appears that the pony was fed at 6 A.M., and cleared his manger as usual: about 8 he was noticed to be uneasy, lying down and getting up frequently, and very soon after he began purging, discharging fluid fæces eight times in half an hour. A bungling and ineffectual attempt to bleed him was made, and a "fever and opening ball" administered. At 1 P.M. I saw the case, when the symptoms were as follow:—Pulse 48, and hard, but not wiry; surface of body and extremities tolerably warm; mouth dry; dejections frequent, fœtid, and occasionally accompanied by a small quantity of mucus; breathing a little accelerated, but not to such an extent as to betoken any affection of the respiratory organs; great restlessness, the patient frequently lying down, groaning, and stretching, but not expressing signs of very violent pain. On inquiring into the previous history of the case, I cannot elicit any information which can throw light upon the cause of the affection: his life has been pursuing its usual undisturbed round, without any increase of work, or any exposure more than common to the influence of the atmosphere. There has been no change in the stable management, nor in the nature of the food, having been eating the same oats and hay for three weeks at least; there has not, in fact, been any deviation from the regular routine of his existence which can at all account for his illness.

I opened the jugular vein, from which the blood flowed slowly: when I had obtained about seven pounds, syncope supervened, and the pony fell in the stall, but soon recovered; a large rowel was inserted in the chest; injections of starch, which were not long retained; legs bandaged, having been previously rubbed with stimulating liniment; warm clothing; stimulating liniment to the abdomen. ℞ Pulv. opii ℈ij; creta preparat. ʒj; extr. catechu, ʒiss, to be repeated in six hours: directed to have

occasional injection of starch and chalk, and a pail of starch gruel to be slung in the box.

2d day.—The purging has greatly abated; during the night the patient ate a bran mash, and drank a pail of gruel: the skin and extremities are quite warm; no uneasiness or appearance of pain, but still considerable dulness: pulse 44, rowel suppurating kindly. ℞ Pulv. digitalis ʒj; spt. æth. nit. ℥ij, mane nocteque. The starch gruel to be continued.

3d day.—Continued to improve until about noon to-day, when the purging returned as violently as ever. At this time, 3 P.M., the fæces are of a very watery nature, and without any appearance of mucus accompanying them. There is great restlessness, with violent pain; pulse at the jaw 47, and extremely weak; mucous membranes paler than natural; skin and extremities moderately warm: no appetite. I do not like to bleed, in consequence of the weak pulse, &c. ℞ Pulv. opii ʒj, pulv. catechu ʒij, pulv. creta ℥j, to be given in gruel immediately: injections as before.

4th day.—A total change has taken place in the character of the disease since my visit yesterday; the purging has quite ceased, and some fæces of a nearly natural consistence have just been expelled: the breathing is increased considerably, both in frequency and difficulty; great anxiety is evinced in the countenance; pulse 70, and full; extremities quite as warm as natural, but the most marked charge is in the action of the heart, which for three or four successive beats can be felt in every part of the body, shaking the whole frame, and rendering its movements visible to the eye, at many yards distance; and then this powerful action subsiding suddenly, and perhaps remaining quiet for five minutes or more, to recommence and again subside. The pulsation of the submaxillary artery does not in any way betoken a difference in the heart's action, but is just the same during its highly excited and comparatively quiescent state. V. S. ℔ ix, when the pulse faltered, and the pony nearly fell. ℞ Pulv. digitalis ϑij; antim. tart. ℥j; potassæ nitr. ʒij; pulv. simp. et ol. palmæ q. s. ut ft. bol. exhibend. sextâ quaque horâ.

7 P.M.—No alteration in the symptoms, except that the powerful beating of the heart is constant instead of being only occasional.

5th day.—The violent action has much decreased, but still it exists; pulse 70; legs and ears for the first time cold; more lively; fæces natural, or perhaps rather lax than otherwise; rowel suppurates well; breathing worse; Schneiderian membrane red: on the whole, the symptoms evince that the lungs are now participating in the inflammatory action. V. S. ℔ viii, the

blood came slowly: continue the fever medicine; hand-rub and stimulate the legs, and then bandage with flannel and haybands; blister both sides of the chest; give gruel with the horn.

6th day.—Worse; the blister has produced no effect whatever; pulse 80, and hardly perceptible at jaw, but an occasional intermittence, about once in forty beats, may be detected; respiration very quick and hurried; extremities very cold; countenance exhibiting the haggard expression which generally drives away all hope. Repeat the blisters, and the stimulant to the legs. Persevere in the febrifuge medicine, adding aloes ʒss to each dose.

7th day.—Still the blisters have produced no effect; all the symptoms are aggravated; pulse 90, and fuller than yesterday. V. S. ℔ iv, medicine ut ante. ℞ Ant. tart. ʒij; spt. terebinth. ʒij mt. to be rubbed upon the chest. During the application of this liniment, the patient shewed great uneasiness: the sides shortly became very hot, and I augured good from its use.

10 P.M.—The effect of the antimonial liniment has passed away, it was therefore repeated, and again produced decided effects, even after the blisters had totally failed. At 12 P.M. the patient was left for the night, in the full expectation that he would be found dead in the morning.

8th day.—Contrary to all hope, the patient seems better to-day; the breathing is more tranquil; the pulse has fallen to 60; he looks about with more liveliness, and even picks amongst the straw, &c. Continue the medicine.

8 P.M.—The improvement in the morning was deceitful—it was only a brighter flame preceding utter extinction. About noon all the bad symptoms returned, and at 7 o'clock he fell down, and died without a struggle.

October 19.—Inspectio cadaveris, sixteen hours after death: On removing the skin from the sides where the liniment had been used, a collection of not less than a pint of serous fluid was discovered in the areoli of the cellular membrane on each side; pleura healthy; left lung inflamed through all its substance, but not to the extent of suppuration in any part; right lung less affected than the left, but still considerably inflamed; about a pint and a half of serum in the pericardium; external surface of the heart apparently shewing no signs of disease; lining membrane of the heart highly inflamed, the left auricle and ventricle being covered with spots of ecchymosis, and the whole surface of the cavities on the right side being discoloured by inflammatory action; liver quite healthy; intestines healthy, except a little appearance of inflammation on the mucous coat at the commencement of the rectum, and a slimy covering greater than natural through its extent.

Remarks.—However the reputation of a practitioner who relates an unsuccessful case may suffer, if he really has the good of his calling at heart, he will not hesitate to lay it before his brethren. It is under this impression I send the foregoing account to THE VETERINARIAN, giving it to the readers of that journal, to extract from it what benefit they can. There is but one part of the case I feel inclined to make any comment upon, and that is, the application of the antimonial liniment to the sides. My attention was first especially called to the utility of this preparation by my friend Mr. Chapman, in October last year, when, under his direction, I used it in a case of pleurisy, with the most beneficial result; in fact, I firmly believe the patient owed his life to its application. It so happened that I took no note of the case at the time, as I did not witness its progress from the commencement, in consequence of a temporary absence, during which Mr. C. superintended my practice at Southampton. On this account, I am prevented from laying it before the public, which I am sorry for, as it was interesting and instructive. Since that time I have frequently had recourse to it, and never without effect: it has gradually risen in my estimation, and henceforth I intend it to supersede cantharides in chest affections. In the instance before us, its effect was most marked, producing extreme heat, great swelling, and, as appeared afterwards, an effusion of a considerable quantity of serous fluid beneath the skin. What the result would have been, had it been used earlier, I am not prepared to say;—perhaps I should have had to relate a successful instead of an unsuccessful case.

Preston, Nov. 1, 1834.

A PECULIAR MOTION OF THE GLOBULES OF THE BLOOD.

By M. GODINE, *Jun.*

IN 1805 and 1806 I was employed, with the celebrated Aldini, in some Galvanic researches. We experimented in front of Port a l'Anglais, opposite to Alfort, on the borders of the Seine, on a horse, decapitated on the spot. The trunk was placed on the left bank of the river; it was armed with an iron wire or conductor, a metre (39½ inches nearly) in length, and reaching to the Seine. The head was carried to the opposite bank, similarly armed, and was, consequently, separated from the trunk by the whole width of the river, about 400 metres (428 yards), at that place. Things being thus disposed, when the Voltaic pile, mounted and in action, was made to communicate with the trunk by a conductor, powerful contractions of the whole muscular system

took place simultaneously, both in the trunk and in the head, although the latter was on the other side of the Seine, and separated by the whole mass of the waters of the river, with the exception of the wire before-mentioned, and which was plunged a few decimetres into the stream.

I leave this result of our experiment, published in "The Journal of Galvanism," in order to speak of another fact observed at the same time in the arterial blood of the decapitated horse. While a boatman conveyed the head of the horse to the opposite bank, I received, in a long cylindrical glass, a portion of the blood as it flowed from the carotid arteries, and I was surprised at the peculiar and manifest motion of the globules or molecules of that blood. I attributed it, at first, to the continuation of the circulatory action. In order to judge more correctly of the cause of this molecular movement in the fluid blood, I inclined the glass gently, and poured half of the blood contained in the glass on the end of a fixed plank, and then, with my naked eye, assisted by a lens of no great power, I saw, and not without agreeable surprise, that each globule or molecule of blood was endowed with a particular movement—a sort of life that was peculiar to itself, and which could not depend upon the circulatory action. They were agitated in different ways, they moved in different directions, and some seemed to be considerably heavier than others. In proportion as the blood became solid, and was beginning to form itself into a clot, the motion of the globules diminished, and each left behind it a sort of track or train in the sero-albuminous portion of the blood, in which nothing of this motion could be detected.

I thought that in the microscopic researches of Leeuwenhœck, and other philosophers of that date, on the nature of the blood, this movement of the globules, and the tracks which they left behind them, would have led to the belief that they were animalculæ;—in the existence of which no one in the present day has any faith.

This first observation engaged me in other researches, the notes of which were lost, with other papers, in consequence of the occupation of my farm at the battle of Montereau. I had varied my researches into this motion of the globules of blood, and had found, 1st. That it was not at all perceptible in venous blood. 2d. That it was in the arterial blood, and most of all in that from the temporal artery, and in direct proportion with the health and vigour of the animal. In an Arab horse of the Prince of Neuchâtel, the arterial blood from the temporal artery exhibited these globular motions very sensibly for between ten and eleven minutes. 3d. These movements could not be observed either in the lymph or the chyle. 4th. In horses weakened by adynamic diseases, or cruel operations, or abstinence, and particularly

horses labouring under typhus, and in those generally that were destined for dissection, or to be sacrificed in certain operations, with a very few exceptions, this globular motion of the arterial blood could be little or not at all perceived.

Journal de Méd. Vét.

CHOKING, AND FRACTURED RIBS IN A COW.

By Mr. J. P. Sinclair, *V.S., Morpeth.*

Being a regular subscriber to your valuable periodical, and having derived much information from the knowledge diffused throughout its pages, I, although a junior in the profession, feel desirous to contribute my mite.

The subject of my present communication was a cow nine years of age, the property of Mr. T. Potts, of Molesdam. I was requested to see her on the 15th of April last, and found her with a portion of turnip firmly lodged in the œsophagus, a little below the portion parallel with the larynx, and which had been there since the morning of the previous day. It was with difficulty that respiration could be performed; the eyes were fixed, and almost ready to fly from their sockets; and there was a considerable flow of blood and saliva from the mouth and nostrils. On the first appearance of obstruction, the turnip was lodged about half way down the œsophagus: efforts had been made to force it upwards, and then with a thick rope and broom handle downwards, and it was left in the situation above described. I had recourse to the probang, but my efforts were unavailing: I therefore very soon recommended tracheotomy, as the only means of saving her life.

After deliberate consideration, the owner consented; and I proceeded with the operation in the usual way, cutting out a portion of two of the cartilages. The moment I had removed them, more than a pint of spumous bloody fluid escaped from the orifice: respiration was more freely performed, the discharge from the mouth and nostrils was considerably diminished, and she seemed quite composed. I left her with instructions to administer small quantities of gruel and linseed frequently, and on the evening of the 17th a small quantity of the lubricative mixture passed down the gullet.

I was sent for again, on the evening of the 18th, to close the wound, as the owner considered the obstructing body to have escaped. I placed my hand upon the orifice, and found that respiration was performed with freedom through the nostril, and, on examining the œsophagus, the turnip was no longer to be

found. I closed the orifice with a few stitches and adhesive plaster, and prescribed mashes and boiled turnips as her regimen.

Being at Molesden on the 22d, I was requested to see her, as she was considerably off her feed. On examination, I found her labouring under constipation from indigestion. I administered sulph. mag. ℥xij; ol. lini. ℥x; croton. tig. ℈j, after the operation of which her appetite was quite restored, and she got rapidly into condition.

On the 3d of June, I was again called to her assistance. The previous evening was the first of leaving her in the pasture for the night since her illness; but she not being disposed to remain, in attempting to jump over a swing stile placed there for the convenience of foot pasengers, unluckily entangled herself upon the top, and continued fixed in that position until five o'clock next morning, where she was found nearly exhausted. She was conveyed home in a cart, and, on my arrival, I found her sides very much swollen and hard; the respiration increased, the pulse frequent, and the extremities cold. The owner had opened the jugular vein, but could get not more than two pounds of blood: I opened both the subcutaneous abdominal ones, from which were obtained six pounds in copious streams. I then administered sulph. mag. ℥xij; nit. potass. ℥j; and ordered frequent fomentations to her sides, and bran mashes as her regimen.

4*th*.—The bowels being confined, the draught repeated.

5*th*.—Bowels freely opened; pulse frequent; respiration much increased. I gave her nit. potass. ℥iv; antim. tart. ℥j; digit. fol. ℈j, morning and night.

6*th*.—The medicine repeated; the extremities very cold. Hand-rubbing and bandages applied to the legs.

9*th*.—Appetite much impaired; pulse a little reduced; extremities natural temperature: gave potass. sup. tart. ℥ij; gent. rad. et cort. cinchona ā ā ℥iss; digit. fol. ℈iss.

11*th*.—Pulse natural standard, but weak; appetite much restored; the tumefied parts soft, and indentations from pressure remain. I made several incisions on the œdematous part, from which she evinced no pain. A copious discharge of serum was established, and fomentations ordered to be applied.

18*th*.—The tumefied parts of the sides were considerably diminished, but there was a line of separation on each, in circumference about eighteen inches, sloughing having taken place. I cut away the whole of the dead parts, and applied a solution of chloride of lime daily. I now discovered that two of the ribs on the right side were fractured (an apprehension I entertained from the first of the accident, but it was impossible to ascertain

from the extent of the tumefaction), one obliquely across, with the superior portion protruding internally; the other having three portions detached from the posterior edge, two of which were easily removed with a pair of forceps; the other was too firm to be as yet extracted.

22*d.*—Bowels costive; I gave ol. lini. ℥xviij, and removed with the scalpel the remaining dead portions of the integument and cellular substance; the other parts were becoming gradually filled up with healthy granulations.

28*th.*—Removed the third portion of bone, but all means were ineffectual to extract that of the oblique fracture.

I did not see her until the 19th of August, when, being in the neighbourhood, the owner requested me to look at her, as there was a great discharge from the right side (the left being entirely healed up). I found the fractured portion had perforated the rumen, and the aliment was escaping from the orifice. I again tried to remove the remaining portion of bone, but it still resisted all efforts until the 23d, in the morning; when the owner being in the act of washing the part as usual, he found the bone loose, and seizing hold of it with a pair of pincers, with a slight effort he extracted it: it was of the whole breadth of the rib, and three and three-fourths inches in length. The part is now perfectly healed up, she is doing well, and in good condition.

USE OF WHITE MUSTARD-SEED IN STAGGERS.

By M. Huvellier.

In April last, I was sent for to see a mare that refused her food, and trembled all over. She was supporting herself by pushing her head against the wall; her fore limbs were drawn under her; her loins arched; her eyes injected; her pulse irregular and vibrating; the bowels confined; the forehead and ears hot; the extremities cold. I took away eight pounds of blood, administered injections, and gave six ounces of the syrup of diascodium, with the same quantity of honey, and two ounces of gum arabic. I would have blistered the legs, but the owner would not consent, for fear of blemishing the mare.

At night, there was the same immobility; the same pushing against the wall: the eyes were not so red, but they were glassy and haggard; the pulse did not vibrate so much; and the neck was bent on one side.

On the following day, she was nearly in the same state; champing of the jaw; abundant discharge of saliva; the head

always resting against the manger; the neck bent, now on one side, and presently on the other; the hind limbs in the attitude of a horse drawing with all his might. Sometimes she lost her equilibrium for a moment; her fore legs bent under her, and then she would make a sudden bound to recover herself and avoid a fall. Her eyes were protruding, yet half closed, and the skin about the orbits was excoriated, from the continuance and force of the pressure against the wall and manger. Her extremities had gained their natural temperature. The clysters came from her untinged. An electuary, composed of eight ounces of honey, and the same quantity of Glauber's salt, was divided into three doses; and two large setons, well stimulated, were inserted along the neck, almost in spite of the owner. Towards night she pushed more violently against the wall, and broke out into partial sweats. The respiration was embarrassed; the pulse was small and concentrated: there was a constant gnashing of the jaws, and a viscid foam was abundantly discharged. The setons had no effect; the mare refused all drink; the pulse became smaller and more accelerated, and the danger was imminent.

On the third day, the pulse was scarcely perceptible, and I could not think that bleeding was indicated. For two days I had resisted the solicitations of the owner to take away more blood. I attempted to move the mare; she staggered a few paces, threatening to fall every moment: her hind quarters were almost paralyzed. As soon as I quitted her she resumed her old posture, pushing against the wall, but not violently: she began to paw with her foot. The same electuary, &c. were ordered to be repeated, with frequent dry rubbings.

4th day.—The setons have neither swelled nor discharged; partial sweats: she must have had some exacerbation of symptoms during the night, for her eyes are more protruded and the lids more excoriated, and there is a considerable and tender cord along the flank. She could no longer be moved; she seemed every moment ready to fall. I determined to give her three ounces of white mustard-seed, after having washed out her mouth with a gargle. In a few hours afterwards there was a marked improvement; she pushed with less force; the neck was straighter; the cord of the flank and the partial sweats disappeared; the arching of the back diminished, and the natural temperature of the frame returned. She would have drunk, but the viscid saliva prevented her. The setons in the neck, which had been insensible, began to be tender.

5th day.—The improvement continues. The animal changed her situation several times, and went to support her head in another place: the pressure is evidently much diminished; it

seems to be now more the effect of habit than design. The saliva is less abundant, and she has swallowed a little bran water. The setons are very painful, and begin to discharge. Continue the white mustard, the same quantity, but at two doses. Continue also the friction and the injections.

6th day.—The setons suppurate; the head is carried well; she walks almost as usual; she has a little appetite; the eyes, although swelled, are clear; the respiration is easy, and the skin feels moist. Repeat the gargle, the mustard, the injections, and clothe her well.

7th day.—She eats well. Chaff of hay and straw was given in small quantities, and she was walked about for some minutes. She lies down in her usual manner, and her walk is firm. Omit the medicine; continue the injections.

8th and 9th days.—Suppuration from the setons abundant. Convalescent. Give unmixed hay.

Récueil, Jan. 1834.

The sudden rousing of the energies of the frame by the administration of the mustard is a valuable fact, whatever we may think of the previous treatment of the case.—EDIT.

REDWATER IN CATTLE.

By Mr. G. DAWSON, *South Queen's Ferry, N. B.*

As facts are always better than theories, and often explain what theory cannot solve, I send the following, as I think there are some points relating to redwater which are not yet cleared up. The disease is very rare in this part of the country, but there is a field belonging to Lord Roseberry, in Dalmaney Park, kept in pasture for the cows, and which has probably lain in grass for 60 or 70 years, in which the disease occasionally appears. There is a great deal of rank coarse grass in the field. The cows which have been bred on the farm are never affected with redwater, but almost every cow which is bought in and put on this field, is attacked with it in about from three to five weeks after she is brought to the place.

The disease has evidently an inflammatory tendency in their case, and requires copious bleeding, even to faintness, and that must sometimes be repeated. The bowels must be opened, and kept so, which I endeavour to do by giving, first, five drachms of aloes, and about a pound of sulphate of magnesia or muriate of soda; and on the following days, linseed oil ℔j, mur. soda ℔ss, night and morning, and also clysters; and at noon, nitre ʒij, tartar emetic ʒij, which treatment is almost always successful.

FRACTURES OF THE PASTERNS.

TRANSVERSE FRACTURE OF THE OS SUFFRAGINIS (LARGER PASTERN) OF THE RIGHT FORE LEG, AND LONGITUDINAL ONE OF THE OS CORONÆ (SMALLER PASTERN) OF THE LEFT FORE LIMB IN THE SAME HORSE.

By M. GAYOT, Jun.

A HORSE, belonging to the relay from Aure to St. Menehoud, fell, in going with considerable speed down a little descent, and one of the fore wheels of the carriage passed over his fore legs. He was raised on a car, and carried to Orbeval, which was not far distant. A veterinary surgeon being consulted, discovered that the pastern belonging to each leg was fractured, and advised that he should be destroyed. My advice was afterwards asked; and, considering that the horse was only five years old, that he was of some value, and that his keep and medical treatment would not cost much (for he was one of thirty horses on which I was in occasional attendance), it was determined that we should attempt to reduce the fractures. He was carried to Aure, and placed under my care on the 2d of May. He had not attempted to get up since the accident, and seemed to have suffered little by being thus transported from place to place, except that the salient points of his body were considerably excoriated.

Having taken off the hobbles by which his legs were confined, I proceeded to examine him, and the fractures were easily recognized. That of the larger pastern on the right leg was transversal, and there was neither displacement, deformity, nor shortening; but the mobility of the divided parts was very great, and the crepitus considerable.

I had more difficulty in discovering the fracture in the left pastern. There was a great deal of heat about the limb, and some swelling round the coronet. The animal expressed great pain when I rotated the limb, and a crepitus could then be distinctly heard. At length I was enabled to assure myself that the fracture was longitudinal. The horse was very tractable during the examination, and the people about him were disposed to do all they could to save him. The fractures on both legs were simple. I ordered the proper bandages to be prepared, and applied them as well as I could.

I directed the bandages to be kept wet with an emollient lotion; camphorated spirit to be applied to the excoriated parts; green meat to be given, and the litter to be thick, and often shaken and changed.

7th.—He had been very tractable: when he was tired of lying on one side, he drew his knees under him, and then, raising himself on his hind quarters, turned himself on the opposite side, without the least portion of his weight being thrown on his pasterns. Some few turns of the bandages were loosened and displaced. I rectified this, and ordered that the bandage should be kept wet with an evaporating lotion.

13*th.*—I again tightened the bandages. The animal now began to make some efforts to rise. I therefore contrived to suspend a sling from the roof of his stall, and raised him by means of it, to see what effect it would produce. He soon began to break out into a profuse perspiration, so that at the end of a quarter of an hour I was obliged to let him down. He immediately stretched out his limbs and his head, as it were with an expression of pleasure, and did not move for several hours. I ordered them to draw him up whenever he seemed to be tired of lying, and not to quit him, but let him down again when he appeared to be uneasy in his sling.

I did not see him again until the 26th, when I did nothing, except to order them still to wet his bandages occasionally with a spirituous lotion.

On the 5th of June I took off the bandages for a little while, in order to ascertain the state of the parts, and found that a callous substance was forming at the situation of both fractures.

27*th.*—The bandages were finally removed, and the sling also taken away. The animal could now get up and lie down without aid; but the precaution and management which he used in order to effect this were admirable. I directed that the spirituous lotion should be continued on the pasterns, and that an ointment should be applied to the hoofs, which had grown considerably, and had become very hard. I changed his stable, and induced him to follow me to his new abode, by tempting him with a handful of oats at every step. He was exceedingly lame on both legs, but most so on the left. There was a considerable callus on each pastern, and the left one was very upright, so that I feared that anchylosis would take place on account of the longitudinal direction of the fracture. I surrounded the feet with emollient cataplasms, in order to soften the horn. On the 30th, the foot was pared out, and a high-heeled shoe put on; and on the same day I applied the cautery in a fan-like form *(transcurro-inhérente)* over the whole pastern. The evaporating lotion was continued on the right pastern, and the ointment to the hoofs of both feet.

15*th.*—The effects of the cautery are already manifest: there is evident motion between the pastern bones, and I have no longer

anchylosis to fear. A shoe with a lengthened toe was now put on, and the horse moved more easily. The cautery was applied to the right pastern.

Walking exercise, gradually lengthened, was recommended.

August 10*th.*—The lameness has very much diminished; it is greatest in the left pastern, which, nevertheless, is regaining its former obliquity.

At the beginning of September he went to plough.

The establishment not being willing to keep the horse, he was sold to a post-master for thirty francs, towards the end of the following June; but being badly treated by him before he was in a fit condition for service, he was sent to farm work. In the mean time, the callus had much diminished in both legs; the horse was scarcely lame, and the cure was regarded as perfect. His present proprietor, however, was unwilling to keep him. He would have to maintain him almost without work during the winter, he therefore tried to get rid of him, and obtained ninety francs for him about the end of December. In other hands, and better treated, the animal gradually got into good condition, and was bought by a farmer at Chalons, who had no other horse, and who employed him in all kinds of agricultural work. I had the satisfaction to see him often, doing well and free from lameness. They called him "Broken-leg."

Récueil, Jan. 1834.

ESSAY ON FOOT-ROT.

By Mr. William Hogg, *Shepherd, Parish of Stobo, Peebleshire.*

It is little more than twenty years since the foot-rot was known as a regular and contagious disorder among the mountain flocks of Scotland. Previously to that time, it was common enough among the softer breeds, grazing on low, rank pastures, and which, in many places, it was usual to shut up in houses and sheds during the night; but the ailment was considered to be only a casual and temporary one, productive of no very serious injury. As it began to spread among the mountain flocks, the numbers exposed to its influence, the rapidity with which it was propagated, and its destructive consequences, induced the store-masters to regard it with more attention; when it was found to be a very contagious disorder, going regularly through its various stages, and, when not checked on its first appearance, leaving the animal so low, that it fell a victim to poverty long before the commencement of mild weather and the return of abundant and nutritious food.

A few remarks on the structure and connexion of the parts affected by this disorder are necessary as an introduction to the subject. The hoof, which is of the same general nature as wool, hair, and horn, is at its point, when sound and healthy, exceedingly hard; but, as it approaches the heel, becomes soft and elastic. The sole is also hard at the point, and becomes softer and thicker as it approaches the heel, where it is about half an inch thick. Both hoof and sole are destitute of sensation, the latter, from its elasticity, easily sinking into small indentations when the animal treads on any hard prominence. In the centre of each hoof, and nearly of the shape of the external hoof itself, is the hoof-bone, the base of which is hollowed into a kind of sole, while its upper part is articulated to another small bone, which reaches to the place where the hoof divides. The hoof-bone is closely invested with a fleshy incrustation, pitted, like a honeycomb, with small indentations, and apparently very sensible. Between this and the horny hoof is another substance, which, lining the foot internally, adheres very closely to it. These two substances are incorporated at their surface by means of a natural cement or bond of union between the dead and living matter, which holds the hoof firm and immoveable. It is the dissolution of this compound substance that constitutes the malady in question.

The first indication of the foot-rot is a slight halt in the animal. It gradually increases, and in two or three days the animal assumes a lank appearance, lags behind the rest, lies much, and, when roused, appears anxious, and confused at finding itself alone. It becomes more and more lame. Frequently the hoof is swelled; and in the course of five, eight, or ten days, the insensible lamina which lines it is dissolved, and the hoof hangs loose round the exterior of the foot, entirely separated from it, except at the upper edge. The disease also eats through the hoof, generally at its lower edges, after which the horny part comes away in fragments. The insensible part of the sole also peels off, leaving the insensible incrustation, which invests the bone, quite bare. The animal is then obliged to gather its food on its knees. It remains in a single spot all day, and turns very lean, and, if the summer be soft and sultry, is unable to preserve itself from the intrusion of the flesh-fly, so that, at length, maggots swarm over its whole body. If it lingers on till about Martinmas, when long exposure to the air and sharp nights of frost kills the contagion, a new hoof grows from its upper edge, and the foot is again sheathed in a horny case; but if winter sets in with severity, the animal, already disfigured by pain and disease, gene-

rally falls a victim. Such are the consequences of foot-rot, when the disease is not interrupted in its progress; but the event is now seldom fatal, as every endeavour is made by the shepherd to detect the malady in its earlier stages, when it can be successfully treated.

On examining the foot, in the first stage of the disease, the coronary edge, though no external injury can be traced, is sometimes found a little swollen and inflamed. At other times the hoof is eroded; but whether it be shattered or entire, an intense heat is always perceptible in the foot, with a strong pulsation in the arteries, where they are inserted into the coronary edges of the hoof; and, however sound the hoof may appear externally, the connexion between it and the interior of the foot is always dissolved, though the separation is not evident till the hoof is pared away. A peculiar smell is perceptible, especially in the advanced stages, or when the ulcerous part is newly opened; yet, even in the worst cases, a large quantity of ichor is never discharged, there being little more than will wet the finger, and that only when pressed among it.

The way in which contagion is conveyed to the foot has never been clearly ascertained. Some are of opinion that it is introduced by the smell, or that the virus left upon the grass by the diseased animal affects the animal through the medium of its food. In either case, it must affect the juices of the body, and might naturally be supposed to affect the general health, before settling in the hoof. But no appearance of this kind has ever occurred to my observation, lameness in one of the feet being always the first symptom which I could notice. There are many cases in which the virus may be communicated directly to the foot, without previously passing through the system. The hoof grows out, or is renewed rather more than once a-year, and its growth pushes forward in the direction of the toe or tip. Hence the toe is often extended to an inconvenient length, and at every step gets entangled among heath and grass. This protrusion soon acquires the hardness and solidity of iron, and in time is accidentally torn away, sometimes carrying with it a considerable portion of the hoof, and then exposing the sensible incrustation which covers the hoof-bone. The virus left upon the herbage may thus come directly into contact with the absorbent surface of this exposed part of the foot. The scarf skin which covers the coronary border, and which is thin and tender, may also admit the virus through its pores. The disease, as has been said, may exist where the hoof is sound and firm, and in this case it must have been communicated through the cuticle, or by the smell, or

along with the grass eaten by the animal, or in some other unknown way. But in whatever way it is transmitted, it proceeds with great rapidity.

When it is suspected to exist, if an extraordinary heat and strong pulsation do not clearly shew that it has begun, the hoof should be gently squeezed between the fore-finger and thumb, when, if it hastily swell out, and slowly return to its usual tightness, when the pressure is removed, the substance which holds the hoof firm round the foot is shewn to be dissolved, and the hoof may safely be opened to get at the affected part. If these symptoms are not so evident as to satisfy the shepherd, and if the lameness still continue, there is no other method for discovering the disease than paring through the hoof. If the foot be uninfected, slight tinges of blood will appear just where the lining of the hoof and the sensible incrustation coalesce. But in all cases where the disease is clearly made out to exist, the loose hoof must be pared away, that the diseased surface may be freely exposed to the air. In taking away what is loose, care should be taken not to go farther than the disease has spread at the time, nor to make it bleed, as the part which is cut is apt to become ulcerous. In dry weather, I have usually found three or four dressings with a proper unguent sufficient to overcome the disease, and to leave it in a fair way of recovery. When the weather is wet, the dressings are not so effectual, especially if they are done in a sheepfold among mire and dung. In this case the foot should be first washed clean, then dried carefully with a cloth, and pared; the unguent should then be poured on so as to insinuate itself into every puncture and crevice left by the disease, and the animal should be held until the unguent is dry, when it should be set on clean grassy ground.

Caustics have been usually resorted to for the cure of this disease, and the substances employed have been various. The following composition I have found to be the speediest, the most powerful, and by far the mildest. To make one gill: to two ounces of turpentine, put half an ounce of diluted vitriol; stir the residuum of the turpentine from the bottom before using. Pare away what of the hoof is loosened from the foot, then anoint it with the above composition. Beware of cutting, or otherwise bruising, the sensible part of the foot; for this encourages the growth of fungous granulations, which are often very difficult to be destroyed. If the weather be dry, and the operations properly conducted, two or three dressings with this mixture are usually sufficient to remove the disease.

To keep infection from the rest of the flock, and to have the disease at all times in sight, a small park should be allotted to the latter, in which there should be placed a wooden pen or fold,

for the purpose of sorting them. The sortings are usually necessary every second or third day; but their frequency must be determined by the state of the weather and the obstinacy of the case.

There is no reason for believing that there is more than one specific malady known by the name of foot-rot. All the cases that came under my observation went through the same stages, exhibited the same symptoms, and yielded to the same cure; but the degrees of obstinacy with which they resist the same treatment are very different. If the sensible incrustation be heedlessly crushed or wounded, or the hoof pared till it bleed, fungous flesh is very apt to rise; in which case the cauterizing iron must be applied. But, unless the cure be mismanaged, there is no tendency to produce fungoid granulations.

The disease is simply contagious, and not hereditary; nor does it seem to affect the constitution previously to its appearance. Wherever it exists, it spreads with an unvarying and constant progress, till it has established itself among the whole flock. On its first introduction, it spread the more securely, that it was long thought to be merely an ulcerous foot, which would soon dry up of itself; but the order and certainty of its course soon convinced the store-farmers that it was a peculiar and contagious disorder. In all situations where it has obtained a footing, we find it beginning in a particular place, and, if unopposed, extending on all sides wherever there are sheep to be affected by it. To these circumstances I may add the universal belief among store-farmers and shepherds, that it is decidedly contagious. There is no reason for supposing that an animal which has once had it, is more liable than another to its attack. It prevails much between Whit Sunday and Martinmas. The cases are obstinate in spring and autumn; but in winter they are generally rare.

There are no soils to which it may not be communicated; but on dry and elevated pastures, if any exertions are made for its suppression, it cannot spread extensively. There the range of the animal is wide and single; its walk is seldom crossed by its neighbours; the air is pure and invigorating, and deadens the contagion sooner than when it has been left on the grass springing from a rank and warm soil. As moisture and foulness are known to strengthen the disease, all rank pastures encourage its extension, and it is on soft grassy soils that it prevails most steadily.

When a sheep-farm or district is free of this disorder, the strictest attention is necessary to guard against its importation. When once introduced among a flock, there is no preventive that I know of, but the most vigilant attention on the part of the shepherd, who must use every means in his power to check

its progress. This he can do only by noticing the infected, and confining them in an enclosure. If the shepherds are anxious and vigilant in detecting it, and make a judicious use of the cure, they at length succeed in extirpating it: but if the summers be wet, the stock numerous, and the disease extended, it may take several years to root it out entirely.

Prize Essays of the Highland Society.

THE VETERINARIAN, DECEMBER 1, 1834.

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

THE unavoidable appendage of an Index to the concluding number of the year prevents the insertion of a review which has lain some weeks on our table, and also compels us to postpone several communications from valued correspondents. Our satirical friend, Paul Pry, must also put off for a little while, his desired, dreaded visit.

This has been a busy month with veterinary teachers and their pupils. On the morning of the 3d of November, Mr. Spooner commenced his anatomical lectures and demonstrations in College Street. For thirty years past it has been too justly complained that adequate instruction on this most important, this fundamental branch of veterinary education, has not been given within the College walls. In the time of the writer of this article it was a mere mockery, and, at no later period, has it deserved a better name. It is fortunate for the pupils that a gentleman, whose diligence and accuracy as a veterinary anatomist were never disputed, nor his anxiety to impart instruction to his pupils, has taken up his residence in the immediate vicinity of the College. The students have eagerly availed themselves of the advantage thus afforded them, and every examination has proved that they have acted wisely. Mr. Spooner, with a liberality that should not pass unnoticed, usually demonstrates from subjects provided at his own expense; and if he will, as he may have opportunity, let them be taken from various classes of veterinary patients, his plan will be complete.

On the evening of the same day the veterinary lecturer at the University of London appeared at his post, after a twelvemonth's absence. It was scarcely prudent for him to do so, for he lectured in pain; and, on the following day, he was again a prisoner in his house. He is better; and, probably, in the early part of

the spring, he may, at least, attempt a short course of lectures on a subject almost equally interesting to the student in veterinary and human medicine,—rabies in the domestic quadrupeds.

On the 14th of November, the new theatre of the Edinburgh school was crowded with pupils. The appearance then exhibited must have been gratifying to the talented, and industrious, and highly deserving Professor of that institution. "A casual attendant" expressed much surprise that, in a history of the progress of the veterinary art, and an enumeration of the veterinary schools, given in a late introductory lecture in another place, no mention was made of that institution which, at the solicitation and under the patronage of the Highland Society of Scotland, was founded by Mr. Dick.

We would fain attribute this to inadvertence, or to the nervousness which every lecturer experiences when he appears before his class at the commencement of a new session—to any thing rather than design. Mr. Sewell knew full well that the Clyde Street school did exist, and was progressing; and that it was—what every veterinary school ought to be—not merely devoted to the cavalry service and the pleasures and sports of the higher classes of society, and, to a certain extent, the facility and advancement of commerce, yet, in a very insufficient degree, connected with the wants and welfare of the farmer; but that it was identified with the agricultural interests of the country, and had become a part and portion of them. Mr. Dick is Veterinary Surgeon to the Grand Agricultural (the Highland) Society of Scotland; he attends, *ex officio*, their principal meetings; his counsel is sought and has its weight in many of their proceedings. In the lesser agricultural societies of Scotland his pupils occupy a similar situation; and there is scarcely a farmer's club that has not its efficient veterinary surgeon. Shall we reverse the picture? There is no agricultural society in England that has a veterinary surgeon professionally attached to it; no one that courts the aid of such an officer, or would listen with common patience to him, or be swayed by his opinion on a purely agricultural subject. We are not drawing invidious *general* comparisons; but here is *one good point*, and whatever inferiority in other respects may attend the Edinburgh school, it was entitled to some brief and passing mention in a professed list of veterinary institutions.

We can even less easily account for the omission of the Abou-

Zabel school; for, although this gentleman *says* that "he never reads THE VETERINARIAN," yet one would have thought that in his general reading (we must not say his general mingling with veterinary society, for that he does not do) he must have heard of the noble devotedness of Hamont, and how, at the very hazard of life, he founded the first school in Africa; a school in which the honour, the grade in life, the dearest interests of the veterinary surgeon, were sedulously secured. When he predicted the speedy establishment of a school in America, and expressed an interest in its success, it is singular that he could bring himself to pass over the Egyptian college in utter silence.

On the 17th Mr. Coleman delivered his introductory lecture. We are happy to say that he has undergone a kind of renovation during his autumnal retirement. For many a year past he has not looked so well, or entered with so much spirit into his subject. An outline, a mere sketch of that which used to be objectionable, remained; but it is more softened down every year. The principal part of his lecture was composed of a rapid survey of the foot: he acknowledged it to be "his hobby," and certainly that hobby has seldom ambled so joyously, and so much to the satisfaction of the rider and the spectators. Mr. Coleman announces that he will lecture on "the general functions and diseases of domestic animals." He has not hitherto kept "the word of promise" so much as his pupils wished, even "to the ear;" certainly it was broken to the "hope:" but if he will now let his advertisement be, what in common justice it ought to be, a faithful annunciation of the course he means to pursue, he will deserve and he will receive their thanks.

On the following evening Mr. Sewell began his course of lectures; and if he, too, will make them more consistent with his original announcement of them—if he will confine himself to the subjects which legitimately belong to his department, instead of seeming to make it his aim and business to shew what discordance of opinion there is on almost every possible point between the professor and his assistant, and thus sending away the pupils puzzled and dissatisfied, and without any basis on which to found scientific and successful practice,—he too will act more in accordance with their wishes and their interests, and will be regarded as their benefactor and their friend.

On the succeeding evening Mr. Morton commenced his chemical lectures, and his class comprised, as he well deserved,

almost every student. The importance of general and pharmaceutical chemistry is now acknowledged at the College; and the students are warned that their proficiency in or neglect of this study will materially influence the result of their examination. All this is right; and Mr. Morton is capable of giving, and will give, them the requisite instruction. If, however, he would in these lectures give a synopsis, at least, of *agricultural* chemistry, he would add much to their value; for, in the language of Sir Astley Cooper at the dinner of 1833, and which we shall not readily forget, "If there is any branch of science which more than another concerns the veterinary student, it is chemistry; and particularly that division of it which has relation to the soil, and its improvement, and its produce, and renders him useful to, and in a manner identified with, those among whom he will have to live."

We now take leave of our readers until the commencement of another year, thanking them for the support which we have hitherto experienced, and which we will endeavour not to forfeit.

Y.

An agriculturist is informed that there is not any systematic work on the veterinary materia medica, but he will find a sufficiently compendious pharmacopeia, so far as it regards the horse, in Blaine's Veterinary Outlines; and for both "The Horse" and "Cattle," in two volumes bearing these titles, and published by the Society for the Diffusion of Useful Knowledge.

To the Editors of "The Veterinarian."

Messieurs Editors,

If you think the subscribed amendment will be received with the spontaneous good humour in which it is suggested, secure it an innocent corner amongst your most valuable communications.

THE NAVICULAR BONE.

This small bone of the horse's foot receives its name from the Latin word "navicula," given to it by anatomists from its fanciful resemblance to a little boat. I propose to change the term, and call it "cymba," which is only another Latin word for the same thing; but then we shall have with it a Cymbad *(mutatâ literâ)*—the professor — who, like the sailor in the Arabian Tales, may always be seen in his little boat, the navicular bone, cruizing about in quest of discoveries upon the coasts of veterinary science.

Verbi Mutator.

Nov. 17, 1834.

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END OF VOL. VII.

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