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HIPPIATRIA;

OR,

THE SURGERY AND MEDICINE OF HORSES.

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As the anatomy of the Horse should ever form the first class of Horse-knowledge, under the title *Hippotomia*; so the second class will be the whole *therapeutic*, or *healing art* of this animal, making a very large and comprehensive class, to which we give the title of *Hippiatria*; and which we divide, for greater convenience of handling, into five orders, as follows, viz.—

HIPPOCHIRURGIA; or, the Surgery of Horses.

HIPPONOSOLOGIA; or, the Diseases of Horses; their Symptoms, and Treatment.

HIPPOPHARMACOPOIEA; consisting of the Medicines used, and their proper combinations. To which we add the

HIPPOCOMIA; treating of the Dieting of the horse, and of any medicaments used to promote his good appearance, or condition, as 'tis called, and to this we may add the

HIPPIATRIA MISCELLANEA; for the entering all matters not properly referable to any of the above divisions, as Mechanical Apparatus of all kinds; Galvanics, if such be used; Natural History of the Horse; his General History; Litigation also, arising from Morbid Affections; and all the other auxiliaries appertaining to Horse Medicine and Surgery; thus constituting something of a System in these affairs.

INTRODUCTION.

HAVING formerly in Dr. Rees's Cyclopædia given a brief sketch of several parts of the Equine anatomy, of those parts more especially of this noble animal which required it, as differing the most widely from those of the human, to which more ample details were afterwards added respecting that important part, the foot of the horse, and of his shoeing, exhibiting for the first time its dire and hitherto mysterious evils. We afterwards took up the pharmaceutic department, and hope and trust we have left useful matter for the Veterinarian in that publication: also a General History of horse knowledge, and some parts of the natural history of this precious animal. We are now venturing not without apprehensions, upon the departments of the medicine and surgery of this noble slave, from a pretty extensive period of experience and labor upon it, which has been mercifully permitted us; and after a few general prefatory strictures, or remarks, we shall pursue this elucidation in a simple alphabetic order, as being the most easy for reference of any, to the practitioner.

It may not however be without its use in the first place, just to explain the meaning of the terms above employed for divisions, as all practising these arts are not alike versed in the Greek and Latin languages, and to whom therefore it may not be unacceptable. Such terms are ever useful, indeed necessary, as saving much circumlocution and affording more precise boundary lines than long definitions, and in facilitating also the writing, thinking, and even reasoning, upon these subjects.

The word *Hippiatria* is derived from the Greek *hippos*, a horse, and *iatros*, a physician, forming together a term that was much wanted in our art, since the word *Farriery* usually employed for it, has in reality no relation whatever to medicine or surgery, referring only to the shoeing department, being derived from the Latin *Ferrum*, iron. *Hippotomia* is from *hippos*, a horse, and *tomo*, to cut. *Hippochirurgia*, from *hippos*, a horse, *keir*, the hand, and *urgos*, work; signifying, bone-setting, and sawing, and other operations of the hands, the very mechanical part of surgery, in which, though adroitness be a very commendable thing, it is an inferior quality to that of a solid judgment in the knowledge of the powers and wonderful resources of nature, in performing cures, without our too officiously resorting to operations, especially painful ones, or any such undertaken from unworthy motives. *Hipponosologia*, from *nosos*, a disease, and *logos*, a discourse. *Hippocomia*, is from *hippos*, a horse, and *komoo*, to adorn, or to ornament, and hence perhaps our word *comely*, also I hardly doubt if the familiar word *comb*, may not have had its origin in some way, from the same root.

In entering on a work of horse-surgery one should be failing in our moral duties not to recommend earnestly the employment towards these worthy slaves of the utmost kindness and humanity, which their merits certainly entitle them to, and not to let them be exposed, to any wanton suffering or infliction; remembering that they are defenceless, therefore claiming our best protection, and to him who is merciful, mercy will be meted out in the day of awful account. The truly enlightened and intelligent veterinarian also will not take up the profession solely and wholly to make all the money he can by it, but to do all the good that lies in his power, in relieving their wants and necessities, and in saving them from any unnecessary abuse and persecution, too readily dealt out by the mercenary and the interested. At the same time, by intelligence in his profession, he can teach the public how to secure their efforts and make the most of their services without loss or injury to their owners or themselves, and in what consists their truest interests in their use.

By many it was hoped, and it might certainly very reasonably be expected, that the establishment of a Veterinary College in this kingdom, by taking the affairs of the horses very much out of the hands of the common Smiths, and Farriers, would ensure a more enlightened, and a more humane treatment of the animal, almost as a natural consequence, but alas! we are obliged to confess that, at the present, no such effects have been produced by it, but that operations as they are called, upon them, under one pretence or other, have increased in a tenfold ratio, and such scenes of cruelty have been perpetrated as would make a man shudder.

INTRODUCTION.

It may perhaps afford some extenuation of such conduct, and that it does not wholly proceed from cruelty, and a desire to get money at the expence of their feelings, that it is almost ever the case that in passing from a course of vulgar routine, or ignorant empiricism, to one founded on really scientific rules, and principles, blunders will be committed, and let us charitably hope they may have proceeded from this state of transition, at any rate such is their best apology. An enumeration of a few of these errors may not be without its use in preventing a repetition, or revival of them when the present period may have passed away, and been forgotten.

The first error these reformers of the college fell into, and were most deeply embogged in, was the doctrine of frog-pressure, first introduced from France by St. Bel, but who was, from past experience perhaps in France, more cautiously occupied with it, but which was taken up by his successor with headlong devotion. The mistake consisted in supposing the horse's furch, or frog, as they called it, was intended by nature as a kind of bolt or wedge to force the inflexions, or heels asunder, and sometimes that it acted the part of a plough, in driving into the ground, and stopping the horse! This delusion was worked upon with blind pertinacity for the space of thirty years, or more, although for the last two thirds of that time, the clearest evidence of the folly and falsity of such doctrine existed in full radiance before the eyes of the blind zealot, but alas, to no purpose! the idea was clever, and abstracted and it therefore must be right, said they. Horses innumerable got punished and thump't upon their tender frogs, some by hard iron bars attached to the shoe, and some by having their inflexural columns removed and lowered, to bring this part in contact with the road, which it was rarely or never meant to touch, of such inflexible materials is a College.* The falsity of the system now almost every tyro in the art understands, which was for so long a period incomprehensible to the professor, and in his harangue to his pupils any allusion to it now only serves to excite a smile. But what recompence can he make to the poor creatures, for the tortures he thus inflicted upon them, in this obstinate manner, when evidence clear as daylight existed of its absurdity? and every experiment of his own must have evinced it. What recompence can he make to the youths thus deluded, and who lost their professional reputation, and business perhaps, by following such an infatuation? or, what benefit have they awarded to him who first discovered the cheat?

One other abuse of the art, we would wish now to speak of and repudiate, which, although not proceeding directly from the college, is proceeding from one of its favourite emissaries, and has not met with its veto: and that is the unspeakable abomination of firing through the skin of horses' legs. It always appeared to me revolting enough, after an animal had lent us his assistance and had done his best, and beyond what ought to have been required of him, both for his own sake and his owners, for he had injured himself thereby, instead of receiving rewards and caresses for such meritorious exertions, which had, it is to be hoped, benefited his owner also, he should receive instead of kindly treatment the glowing favour of a red hot iron, applied to the sensible skin of his legs: and our debutant of the college, not content with a light firing, has proposed the above horror. For my part, I always thought a light firing the best, and so did M. Crepin, one of the best veterinarians in Paris, with whom I conversed on this subject when in that metropolis, and can only compare such an abominable proposition to the killing the goose that is to lay the golden eggs.

* It is truly curious to observe the vast deference that is often shown to a place so designated, a sort of blind reverence that is unaccountable, or as though there was something superhuman about a college, although the word has its sole source from the simple Latin verb *colligo*, to collect; meaning therefore, nothing more than a collection, and such may be good, bad, or indifferent, as it happened, and nothing demanding such an implicit acquiescence. It is lamentable however, to see, that corporate bodies having vested interests ingrafted in this way, dare to perpetrate iniquities that no individual dare attempt, suppressing often that very knowledge which they were bound in duty to foster and encourage, but which they keep out of sight for fear of laying open some interested corruption, or some glaring ignorance, deficiency, or inconsistency, of their own.

Legs most hideously enlarged, have we seen from this scandalous practice, with imminent peril of a general sloughing of the skin ; and one instance of a fatal issue has come to our certain knowledge from this frightful method of firing. We consider it a paragon of folly as an operation for producing beneficial effects, and as surpassing in cruelty all the operations in use with the unwashed, unreformed school, of the old farriers. A stroke of the red hot iron we should suppose about equal to the cutting of twenty knives, in stripes of the same length, that it may be imagined a little what the animal has to suffer from some scores of these lines, when inflicted in the cool, deliberate manner, we have at times seen it done, by one of the reformed school, to evince to the bystanders his complete self-possession, in *doing* an operation. If a horse has been so damaged by his employer as to make it necessary to resort to such measures, surely it would be a hundred times more merciful to destroy him at once, than to torment him in this way. We here desist from further remark on this subject as there will be again occasion to advert to it in its place under the article, *Firing*.

There is still another piece of refined cruelty in the operation way, and proceeding from the College itself, that we feel bound to notice in the preamble to a work of this sort and this is, nerving, or rather, unnerving, the legs of horses, usually adopted for lamenesses of the feet. Where the sagacity of the reformed school is unable to discern the cause of a horse's going lame, for instance in cases of contracted feet, the common and most frequent source of lameness among horses, it is a ready means of getting rid of the question to pronounce it a case of founder, and then to propose a severing of the nerves, going to the part, and proclaiming it, "a brilliant discovery," and from the frequency of contracted feet, they would not fail of having plenty of such cases to reward the operator. Now if this most *exquisite* operation, for cutting of nerves is an exquisite affair, was really performed in a *bonâ fide* manner, upon the principal, or main nerves of the limb, the animal went stumping about, for it could hardly be called going, till his hoofs came off, and sometimes, as we ourselves saw examples of, the accident happened whilst the horse was in the middle of the road performing his work, at other times the separation was first detected while standing in the stable, by the finger of the groom, and such was inevitably leading to the destruction of the animal, since a succedaneous hoof is well known to be of little, or no use. This dread catastrophe it would appear, results from a want of due nutrition to the hoof, and the other parts concerned, as arteries, when deprived of their accompanying nerves, do not act with the same energy as when these are present, and further that, by the removal of these faithful watch-dogs, which are bestowed to give timely notice of any part not being in a state fit for service, that such in proper time may be desisted from ; for, a part that is not in a condition for use, being used, some derangement or dismemberment, will be the consequence. Finding these calamitous results, they became pretty quickly more cautious, and wary, and took to partially, or only half nerving, snipping only twigs and branches of nerves, but as such did not always remove the sensation of lameness, and occasioned demurrings, and unsatisfactory results, so the rage for this wholesale proceeding, then begun to experience some degree of remission. However, *malgré tout cela*, an operation was much too good a thing to be given up, and abandoned, which afforded such opportunity of surgical displays, and of profit too, so that it became less cautiously exhibited in the skirts of the town, and in the country, in the former we knew those who made it a boast of the numbers they had so served, and had *hopperated* upon, and of the astonishing quickness with which they did the same, and the great traffic they had made in carrying on the game. At length however, they began to discover, and the public also began to assist them a little in this knowledge, that these cases of founder were only mere cases of contraction, and that by a proper attention to the shoeing these might be relieved, by giving the foot a little more liberty upon the expansive principle, and this they then added to their operation, but took good care to ascribe all the good, to the operation only, and nothing to the shoeing ; in this way a slight

scratch or two and a little blood issuing, was found would do as well in some cases, in securing the bonus, as the real operation, and at length we hear but little of this nerving, and as the expansion principle becomes more and more practised, and understood, we shall hear still less and less of it. My friend Moorcroft indeed first raised the suggestion of nerving, but from humane motives, and from fearing the abuses of it in vulgar hands, kept it very much to himself.

In an introduction to the surgery of horses, it is proper that any surreptitious practices, and abuses, so easily fallen into, should be exposed, as much for the honour of the profession, as out of regard to the animals themselves. We shall therefore notice in this place another pruriency of the reformed college, which appears to deserve some little attention, if not castigation, not at all fearing to lose by it, the support and patronage of a college, or indeed of a profession, we never, except in a very few instances indeed, cordially obtained, although always endeavouring by the most earnest means to merit it, and by our researches to promote and deserve it. We shall not now therefore at the eleventh hour on that account withhold anything which we think may be of benefit to the animals, or may render the future profession more intelligent, more useful, or more humane.

The practice lately fallen upon, and which we have above alluded to is, that of running setons through the horse's furches, or frogs, as they are called, under pretence of discovering a disease which can in reality only be known by dissection after death, the interest concerned in so doing the reader will readily divine without its being particularly mentioned by name.

The facts of the case appear to be these, that there is undoubtedly occasionally found in shod feet an ulceration, or erosion, of the *shuttle*, or *nut-bone*, (*os nuciforme*,) which bone is placed across the foot, immediately behind or at the back, of the coffin-bone. It has appeared to us not improbable, that this disease may have had its origin, or been occasioned, by an undue pressure upwards of the horn-sole, and all the lower parts of the foot, from the too violent nailing on, of the shoe, and in some cases, more especially where a lowness of the bones of the foot from natural structure existed, or from the want of a sufficient mass of elastic material, between the horn-sole and this bone, or otherwise from an unusual elevation of the commissural ridges of the sole, or from one or all of these circumstances combined, an unusual pressure then upon this cross-disposed bone of the foot would take place, and at length an erosion, more or less extensive, of its inferior surface. Now this they have chosen to call the *Navicular Disease*, confounding thereby this bone, at least in name, with the *navicularis* bone of the human anatomy, to which in situation, appearance, or use, it has not the smallest affinity, thereby creating much confusion, and obscurity. Moorcroft appears to have been the first to notice such an erosion, but did not conjecture its cause, and indeed so very rare is it, that in fifty years' close application to the feet of horses, and very frequent dissections of them, which those perhaps who have witnessed, and read my labours, and discoveries therein, will give me credit for, I never met with but a single, solitary case of this disease, which I figured, and gave an account of, in an extra, or supplementary plate, with other matters, adding it to the eleven plates I had previously given in that work on the foot. Others I know have collected together numerous bones of this kind, ulcered and eroded, but many of them obviously, had been the results of kennel-nail cases, or cases of canker, which should not have been at all confounded with it; or it may be that this disease may also have its source from the long continued constraining exertion necessary in going on the toe, as where the heels had become tender from a contraction of the whole foot, the usual effect of common shoeing, or from other bad practices, aided perhaps also by the presence of, and tenderness from, running frushes.

Now the discovery of this rare disease has been made quite a mare's-nest of, with some of this profession, who have also turned it to good account, and if any case of lameness presented, that was a little obscure, and of such there will be always plenty, it was immediately declared to be, a *Navicular*! And what might the reader

imagine was then the remedy proposed, why an operation of course, and no other, than that of casting down the poor horse, always attended with affright and terror, almost as bad as the operation, and running a knife through his furch or frog, as it is foolishly called, a part wholly unfitted by its texture and construction for any such operation, and at too great a distance from the nut-bone, the seat of the disease, to do any real good. In passing the blade through, he first had to encounter the whole thickness of the horn of the part, of little use truly, in procuring a suppuration from, he next transfixes the cartilaginous capsule lining the horny cavity of the furch, and he then drives it through the cartilaginous, constricted layers, extending across the cavity of this lining capsule, and finally and lastly through the intervening pulpy gelatinous membranes which are interposed between these layers, precious materials all, truly, for obtaining a suppuration from, and how such suppuration when obtained, was to heal an ulcer situated at the distance of the shuttle-bone, with all the various matters interposed between these two parts, is no easy matter to explain.

Where such an ulcer, from any circumstances attending the case, might fairly be supposed to exist, the remedy to be adopted, as we believe, should be, at least as it at present appears to us, is to insist upon a total remission of the original cause of the evil viz. the nail shoeing; and next, to order a prolonged run at grass, without shoes, where the cooling sod to the foot itself, and the refreshing herbage to the body, or system, would generally after a time, it is probable, bring back the suffering parts, to their pristine tone, and condition, and then would take place, the healing of the sore. But if of necessity the horse could not be spared from his work, the working of him as moderately as possible, without shoes, or with shoes only lightly applied, and upon the expansion system, or with tips, or a paratrite, such would enable him to perform as much as an injured subject of this kind ought to be expected to give. In short, he ought to be treated in all respects, we apprehend, as for a general contraction of the whole foot from shoeing, as we can never get at the ulcer itself.

Now there are many in this profession no doubt, who intend honourably, and well, and men also of humanity, but such is not always the case in the motley groups who go up to pay their twenty guineas to get a sanction from the college for all this sort of practice, we are therefore desirous to warn the public against this intolerable passion so many are found to have, for resorting to operations, some to exhibit their coolness and surgical skill, and others for ends we need only allude to, without particularly naming. And further to augment this frightful propensity, there has lately an Italian veterinarian, come over to this country, recommending various absurd operations upon the round bone of the poor horse, in cases of lameness behind, on pretences the most absurd, and with a most revolting cruelty, reviving to the letter the tricks that used to be played formerly, by the old farriers with this part, a part so truly strong by nature, as hardly ever liable to be out of order.

An account of this Italian's most wise, and most merciful suggestions, duly displayed, may be seen in the veterinary periodical of the day.

In human surgery the practice is not half so sanguinary as formerly; nor are half the operations now performed that used to be eagerly resorted to. A slight depression of the cranium was enough for the surgeon formerly to fetch out his trephine, and bore through the skull of the poor patient; now it is found nature can remove in most cases such an inconvenience, without any other aid than keeping the system right. The painful operation of cutting for the stone now is nearly superseded by the crushing instruments; heavy splints for broken bones are much abandoned for the simple compress and cushion, and every progressive step in the art, leads into a more easy, less painful, and more simple treatment, for nature it is true must ever perform the cure at last. In confirmation of this remark, a very eminent surgeon, Sir Benjamin Brodie, has the following remarkable passage. "In a table I constructed of cases, it was curious to observe how large a proportion of the recoveries occurred in those cases in which the surgeon avoided an operation altogether, or confined himself to the removing of some loose, or detached pieces of bone; a person who has a musket ball lodged in

the brain is in a very dangerous condition, nevertheless it appears to be safer to allow it to remain, than to endeavour to extract it." *v. Introd. Discourse*, p. 19. And I know also by long experience, from an extensive business among horses, having myself attended for years, some of the largest breweries and horse concerns, of the metropolis, that such may be done without much casting down, of the horses, and that such I can say is not by any means frequently necessary. Simplicity again may be carried too far, and I am convinced that I have seen in Paris amputated stumps treated with simple lint, or lint dipped in water, that have mortified, and great numbers there do so, and which a little of our warm digestive, of rosin softened with oil, would we believe have certainly brought to a healthy suppuration, and to a sound healing. So that it is obvious we may err on either hand.

There is one comforting reflection however, amidst all this, which has attended the attempt at reform in these arts in this country, and that is, that the horse's ears, and their tails, are now left more at their ease, and free from amputation, and the practice of nicking, and of docking, we hear but little of comparatively at present. A practice however has sprung up of late of shearing the horses of their coats, or of clipping them close as it is called; how this fashion originated, or with whom, I know not, but believe it to be a very absurd one, and would not be much practised, did there not a small gratuity, or *douceur*, attend the doing of it, and if there were no scissor-makers to recommend it. That it makes horses go better, and that it will cure a cough, I have heard some say, but what will not interest, and fashion, make people assert in aid of her practices? I am myself no believer in such doctrines. A fatal case has just come to my knowledge of a beautiful and most valuable Norway horse, by inflammation of the lungs, immediately consequent to a clipping operation of this sort. Like the hateful list of Banquo's Progeny, "*another and another comes, and the last fool was welcome as the first.*" The sub-professor to his former unlucky attempts has lately proposed yet another operation, that of pricking, and digging, through the skins of horses' legs down to the periosteum, by way of relieving them from spavins, splints, &c., one of these cases we hear, by extending the inflammation to the joint, terminated in a general ankylosis, as might be expected, this operation is called for brevity, the *periosteotomizing* operation.

Operations also on the genitals of the horse, of a most cruel description, under the pretence of calculi in the bladder, have been ostentatiously exhibited, and I believe if fairly investigated will be found to have no real grounds for them, that can truly sustain, or justify, any such exhibitions as these.

Whilst upon these unpleasant, but very necessary topics, I may also just observe, that the profession would be much more useful, and respected, if its votaries were more select, instead of allowing the admission of all that please to offer themselves, with twenty guineas ready for the professor's opening palm; if some sort of previous examination was required, as to the extent of education, and degree of fitness, of the candidate, for becoming an authorised member of what ought to be, *a liberal profession*, and indeed such inquiry was actually enjoined by the original rules of this corrupted institution, but at present we do not hear of any being unfit who can only command the requisite fee, and the accumulation of such fees beyond a certain amount, ought we think to form a fund, for the various wants of the college itself, and for the encouragement of its more poor, or meritorious members, especially for paying the examination fee given to the human doctors that the professor appoints on these occasions, or for prizes given for good essays on the art, instead of its being a continual seduction for the admission of as numerous a host as possible of all sorts of characters. The income at present in this way is enormous, and for what!!! we observe also that the lowest characters are ever the most flexible, and readiest, to be supporters of its corruptions, and abuses, whenever the professor has occasion for their aid.

THE SURGERY OF HORSES.

Arteriotomia, Arteriotomy, or the opening and closing of arteries. The only large artery we are used at present to open in the horse is the *Temporal Artery*, more particularly useful in affections of the brain, which however in this animal generally arise from some disordered action of the bowels or stomach, where the chief attention should be directed; also in violent inflammations of the eyes. In respect to making the opening it may be well just to remark, that this as well as all other arteries are more difficult to arrest the bleeding of when partially divided, than when completely severed, since the divided ends or extremities can then more freely contract and arrest the effusion of blood, than in the former case, therefore in taking away blood from this large vessel, we have found it best to pass a sharp-pointed bistoury under or behind the vessel, and so near to the bone as in bringing it out completely to sever it, by which a sudden and copious flow of blood was obtained, and any danger from too great a flow was obviated.

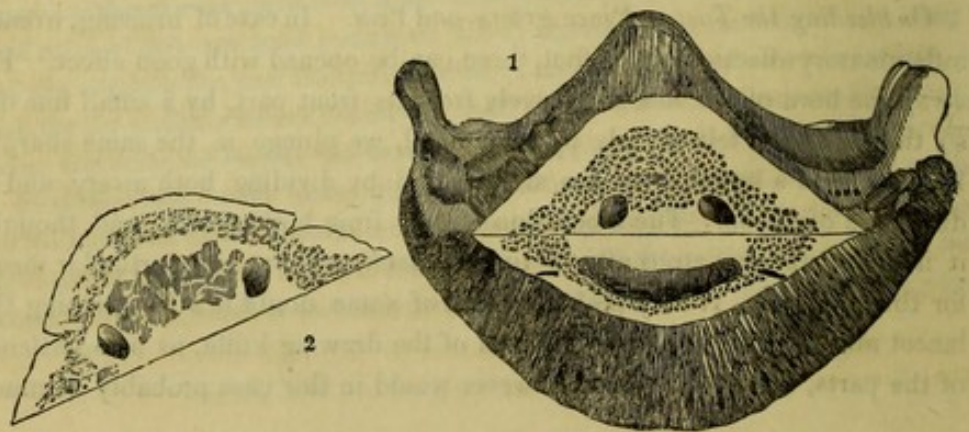
By this proceeding however, the accompanying vein is usually divided along with it, and blood of both colours is seen to flow, and it will be observed that after a time, not very long generally, the blood will cease to flow by its clotting and coagulation, and plugging up of the vessel, and also perhaps from the ends of the vessels themselves contracting at the same time. We thus rapidly and fully effect the unloading of these vessels, and of all the adjacent parts, and of the system generally.

Of bleeding the Coronary Arteries, and Veins; which circulate upon the rounded summit of the foot beneath the skin and cutidura, spreading upon the cartilages. These may be usefully divided in injuries of the foot from sprains, wrenches, treads, or inflammatory affections, or arising from the shoeing by its compressive power, or from a too deep nailing. It is done by successive dips with a round-pointed lancet through the integuments, which should not be plunged in too deep as the vessels lie superficially chiefly, and are ramifying in reticulations, and endless anastomosing upon the surface of the cartilage. They are veins chiefly with numerous arborescent arteries coming through the cutidura for the secretion of the horn perhaps, and which are divided along with the veins. The bleeding ceases after a while of itself from coagulation in the orifices; neither have I seen injurious consequences ever result from this mode of depletion. If a more copious stream be thought advisable, it may be obtained by using the lateral edge of the lancet in longitudinal gashes on the part. And if the utmost local evacuation be required, the application of cloths wrung out of warm water will procure it.

On bleeding the Toe, or Pince Artery and Vein. In case of bruising, wrench, compression, or other inflammatory affection of the foot, these can be opened with good effect. For this purpose we thin away the horn of the sole extensively from its front part, by a small fine drawing knife, and when so thin as to be felt sharply by the animal, we plunge in the same sharp tool, or small drawing knife, (called a searcher by the smiths) and by dividing both artery, and vein, procure a copious discharge of blood. The blood flows freely from both vessels, and though the artery be divided, it in a general way stops after a time of itself, without any particular measure being resorted to for this purpose. It may perhaps admit of some doubt if after thinning the horn sufficiently, the lancet might not be employed, instead of the drawing knife, as being attended with less laceration of the parts, the flow of blood however would in this case probably be much less copious.

Complaints have been made by some that a festering of the sore has followed this operation, and such we believe can easily happen, but we do not remember however of any such instance in our own practice, and believe where it has occurred, that it has been from a neglect in not thinning away the horn sufficiently before making the opening of the vessels, and that the wound was not dressed as it ought to have been afterwards, with a mild resinous dressing, first on lint, and then with a pledget of tow deeply immersed in the same and laid upon it, and lightly packed in, but not forcibly rammed upon it, the resinous digestive should have a consistence of considerable tenacity that it might not so soon be lost by sinking away among the tow and dressings. The wound should also be inspected in a few days after, that if any hard, or impinging point of horn offend, which is known by a limpid oozing from the part, such should be thinned away and removed, when the healing will readily take place. It is in this case only the small circumferential artery and vein of the sole that is divided, the main artery being snugly enclosed within the solid body of the coffin-bone, encased most curiously in its semicircular recess, and is from thence sending forth by numerous ramifications the blood to the outside of the bone and to the reticulum and the podophylla, &c.

This singular feature in the circulation of the blood in the horse's foot being completely new to us, we give a woodcut of it, see fig. 1. A triangular piece of the bone being removed presents a view of this remarkable cavity, which on the vessels being drawn out affords on its receding surface eight or ten, or more openings, which are found, using a thin wire for the purpose, to communicate with all the exterior apertures of the bone, especially those larger and oblong ones which are situated near its lower edge. The roofing of this cavity, see fig. 2, presents also the two oblong foramina, which are conveying the arteries into this cavity from the back of the bone, and between which openings is visible a large cell that appears to act as an air vessel upon the circulating apparatus, and on minutely inspecting it, we see this deep cell is formed at the bottom of various oblique ribs, and threads of bone, placed at acute angles to each other, and having in the intermediate spaces numerous small and hardly visible openings, which again are found to supply the upper parts of this bone, and its coverings probably, with blood, making altogether perhaps more than twenty vessels, and which together appear to form a radiating centre, from which proceeds the chief arterial circulation of these parts. As this singular part does not appear to have been before intelligibly described, figured, or named, we shall call it *the Cavitas Semilunaris*, and hope it may prove an acceptable acquisition to our knowledge in these arts. It will also be pretty obvious, that the two currents of blood in the two arteries meeting in this recess, by opposing each other, will render the circulation more slow; also the arteries proceeding from them at right angles will further contribute to break a too rapid



course of the blood in the foot, and to render it, even under strong exertion, more uniform.

On Closing Arteries, or other large vessels that refuse to stop bleeding, compression is the usual means resorted to, or the severing of the vessel, as we have above noticed in respect to the temporal artery; if these avail not, a ligature is passed round the vessel by a curved needle, observing to tie the extremity of the vessel next the heart in arteries, and the contrary extremity in veins, or both if requisite. Torsion has also been recommended by some, but is not at present greatly approved of by our English surgeons, and my friend Sir Anthony Carlisle has an ingenious method of stopping the effusion of blood in a different way, by employing a solid iron cylinder of about the size of the forefinger, and of about half an inch in length, attached to a thin iron rod or wire, for a handle; by immersing this solid cylinder of metal in boiling water, a certain degree of heat only, is soon acquired, and which is sufficient if held to the part, to coagulate the blood, and to form a plug in the orifice of the vessel, adequate to the arrest of any further effusion, the coagulable lymph of the blood being rendered solid by a less heat than 212 degrees.

On Bleeding the Horse, Venæsectio. There is no operation the veterinarian will be called upon to perform so frequently as that of bleeding, it behoves him therefore and is of essential consequence to his practice, that he should be familiar with it, and perform it with address and dexterity. And be also well acquainted with the various accidents, and evil contingencies which may at times result from it, however carefully or skilfully, it may be performed.

Bleeding from the jugular vein in horses, is of all operations the most useful; for diminishing the general mass of blood in the system, and thus counteracting any local or general, inflammatory action—for destroying plethora or over-action of the heart and arteries—also for removing oppression from engorgement of vessels when it is suppressing their proper actions. As a general rule in doing it, it is to be observed, that the larger the orifice and the more copious and sudden the stream, the greater will be the effect upon the system, and that with the loss of a less quantity of blood, which in some cases of fevers liable to sudden collapse, and debility, is of the very greatest consequence, as being more easily recovered from, the effect being greater even than would be afforded by a larger evacuation taken away more slowly. *The Fleam* therefore we prefer in a general way to the lancet, in removing blood from the neck, as giving a more copious stream, and as being less liable, especially in common hands, who are often sent to do these operations, to abuse.

By pressing upon the vein below the point intended for the orifice, we swell the vein above, and enlarge it to a size that makes it no very difficult matter to strike it. The vein is however often not opened though a vigorous stroke has been given, and such formerly used very often to be the case, and arose not from missing the vein, but from the fleam being made with too slender and genteel a back, such being often put into a knife-handle, so that the prominent, rising muscles of the neck enclosing the vein receiving the impression of the stroke, the vein yielding before the instrument, was not opened, but now they are usually made otherwise, and with a very broad back.

It is usual to wet the hair over the part intended to be punctured with saliva, and then if these are drawn parallel to the direction of the vein, the lancet passing between them, there is less resistance than if they presented transversely to the blade, in which case they must necessarily be divided before the incision could take place. It is however true, that very much wetting the vein outside may occasion the jet of the blood rather to take the direction of the neck and not deliver well, that this should be also attended to.

In timid, shy, and suspicious subjects, as in some kinds of blood-horses more particularly, we have sometimes tied a common bottle-cork in a string, and pressed it upon the vein, then passing the string round the neck, we set the hands more at liberty for the use of the fleam, or lancet, which in delicate or timid subjects is best used, held short between the thumb and forefinger, and so managed as to go only to the prescribed depth. An abscess lancet is the best for this purpose, but not too large however, or very long in the point, as it may pass through the vein on the opposite side.

The proper Recipient for the blood in these cases of jugular-vein bleeding, appears to be a light *Tin* or *Zinc Can* holding about a gallon, or rather more, and graduated inside or out, or both, in pints. The handle of it may project from the side in such a way as conveniently to be made to press upon the vein below the orifice, thereby facilitating the bleeding, or which is better, a globular or hemispherical hollow boss, or ball of tin, may be placed on the side for this purpose, instead of violently as is now usually done, pressing the edge of a stable-bucket against the vein, which can be only applied in a very partial manner, on account of the projecting muscles of the neck.

To execute this manipulation conveniently and satisfactorily, two things are requisite, good tools and keeping them in perfect order, ever ready at a moment's notice; a commodious apparatus for this purpose is the following: an oblong square piece of morocco or other leather, ample enough to turn down on the sides, to cover the following instruments, confined by a strap running down its middle, viz. a large and smaller fleam, an abscess lancet, a smaller one for bleeding the eyes, a pair of wire-nippers, a small pocket or pouch at the end, for a lock of long fine tow, and a floating leaf of kerseymere for the insertion of pins, &c. will furnish all perhaps that is actually and indispensibly necessary, and being wrapped in the leather will occupy the smallest possible space in the pocket.

A Fleam is often made with a spring, commodiously to plunge it suddenly into the vein, being less alarming than the employment of the hand and of the blood-stick. The objection to them is, that the instrument from being pressed firmly against the neck in using it, cannot be so suddenly withdrawn as might be desirable, and we have seen the horse plunge immediately on receiving the stroke, and the projected blade has ripped up the neck to a considerable extent. To prevent such an accident another spring let loose by the stroke might bring back the fleam again within its frame or case, by which such an accident would be obviated.

Ulceration of the Jugular Vein. Bleeding the horse's neck-vein is certainly not a very difficult, or hazardous manipulation—considerable care, and attention are however requisite afterwards, to ward off evils which in various ways are attached to this operation, and in this particular case most true is the maxim, that prevention is better than cure, and a slight attention may remove very serious troubles. For this immense vein is very liable to subsequent inflammation and ulceration of its cavity, extending often in one or both directions, along its internal surface, obliterating the cavity of the vein itself, and often going on in a backward course, till it reaches the head, and causes the destruction of the animal. Immense thickenings of the surrounding cellular membrane generally attend this lesion of the vein, forming abscesses into which the blood often finds its way, and becomes very troublesome, and which, continuing on in succession, at last reach the head, when death ensues. To avoid therefore so calamitous an event, it will be well to observe the following attentions: To use a clean, sharp, smooth instrument; not to strike the vein where

it has been often opened before, and has become enlarged, thin, and bladder-like, but rather to go above or below such part; in pinning up not to include more than the skin. Nor to leave the pin of its full length, as being liable to catch objects and getting entangled, tear out the piece, and rend open the cicatrix; a pair of wire worker's nippers are the best for this purpose. The pin also should not be allowed to remain in the neck too long, in a general way perhaps twenty-four hours is sufficient, but where the horse is very full of blood and the orifice has been large, and has bled freely, eight and forty hours will not be too much, and not whole days or weeks as we have often seen it negligently left. For the wound in drying and cicatrizing with the pin left in, is apt to become itchy, which may induce a rubbing upon the manger, that may be attended with injurious consequences. Now the pinning of the neck is sometimes, with high fed and skittish subjects, a troublesome affair, more so than the bleeding; in some cases therefore, where it is likely to be so, pressing the lips of the wound together between the thumb and finger, holding it a short time, and then tying up the horse's head to the rack, or to the heel-posts, and to let him so remain an hour or two, till the desiccation of the blood shall confirm the union, and render the pinning unnecessary. Also to avoid pinning, where the bleeding has been very free or profuse and the orifice large, it may be better to place a bit of dry lint upon the closed vein, holding it awhile, and then placing upon it a thick lock of tow, and with a ribbon or fillet carried round the neck, make it fast by passing it between the hairs of the mane for greater security. In removing these pledgets however, into which the blood may perhaps have extensively insinuated itself, and strongly glued them together, we should proceed cautiously, not to rip open the wound, leaving, if it seemed requisite, a small portion that immediately covered the orifice, to fall off of itself; also sometimes it may be better to use warm water to dissolve and relax the blood in such a case, but this should not be done coarsely so as to dissolve the cementing blood in the orifice itself, but be used short of this, as it may otherwise relax the tender cicatrix, and bond of union, and so renew the bleeding, which at this period is particularly to be deprecated. If any part of the dressing be left on the sore, the groom should have notice of it, and be warned in cleaning the neck to have respect to the part, and not tear it off, for it is better the part should go uncleaned for a few days than to run any risk of this sort. The wound also should not be left in a wet condition, as such may unglue and open the orifice again. By attentions like these we may perhaps almost entirely avoid any ill consequences from the performance of this very frequent and often most beneficial evacuation.

After trying many stratagems with these unfortunate cases of ulcerated and obliterated vein, such as poultices, cutting out the thickened parts, causticking, &c. we found at last, mildly blistering the skin over the part, as efficacious as any, very much assisting in the reduction of these tumours; though, we believe, measures more immediately efficacious than this will probably hereafter be discovered for these unfortunate cases. However, after the precautionary measures above urged to prevent them, much may also be done by attention to the evil in its early stages; for when the vein does not heal kindly, it is known by an oozing, or weeping of lymph from the part, which, if neglected, is sufficient of itself to prevent the drying and cicatrizing, or healing of the wound. It therefore behoves us now, without loss of time, to give it our best attention, and to destroy this first indication of so pernicious a mischief.

In order to divert or change the enfeebling and languid action going on in the surfaces of the sore, in a case of a neck lately bled by the groom, that I was called into of David Ricardo's, Esq. of a noble coach-horse that had been bought under my own inspection a few months before, and for the sum of two hundred guineas; I immediately touched the weeping, oozing sore, with lunar caustic, not violently however, or so as to force anything open that was already closed, but gently, doing it once or twice, and then to prevent this high-bred, high-fed, noble animal, from rubbing the part, which in all probability smarted pretty handsomely, against the manger, I ordered him to be turned round in his stall, and his head to be secured by the reins, *in medietate rebus*, between the two heelposts of the stall, and to remain in that attitude for two hours, by which time the smarting would have gone off, and the effects of adhesion in the surfaces of the wound be produced, that were sought for by these means, and then being set free, to be watched for another hour to see that he did not abuse his liberty. In this way in about a week, this unpromising case, having been twice or thrice gently touched with the caustic, healed, was dried up, and skinned over, and a very valuable horse probably saved from destruction.

The same measures were pursued with a cart-horse in Lambeth, a little before this, and with the same happy results, adding after the dressing a minute portion of lint to the wound, that it might, being light, stick in the wound, without any addition of plaster or bandage, thus assisting in drying the sore, which would materially facilitate the healing of it. And since then, in another case, I used the conglutinum, or strong solution of sulphat of zinc, and with the same success. Getting the wound to dry appears to be of the greatest consequence in assisting the cure.

It may be well just to remark, that where the jugular vein has been obliterated, the horse is, I apprehend, very much deteriorated in value thereby. A distiller's horse which I had cured of this injury was sent to grass at Peckham, and after being there about three weeks, word was brought me that he had suddenly dropped down dead; and there is little doubt, as the same thing has occurred in other cases, that it was from apoplexy, the blood not returning freely from the head on account of the obstructed vein, which caused the disaster, so that every exertion should be used to prevent, if possible, such a miserable conclusion by early care.

On Sudden Death from Bleeding, &c. Only two cases of horses dying immediately after being bled have come to my knowledge; in the one the artery appears to have been divided and was soon fatal; in the other, Nesbitt v. Kent, the vein would appear to have been cut through both sides, and the blood extravasating into the cellular membrane of the throat and larynx, the horse was rather killed by the choaking than by the loss of blood. If a ligature had been placed on the vein above the orifice, and a free issue given to the extravasated blood, the horse might perhaps have been saved.

On Bleeding the Conjunctive Membrane of the Eye. Which consists in simply everting the lid, and scarifying it freely with the sharp point of the lancet. After this it has also been usual to bleed the angular vein, proceeding from the canthus of the eye, by an oblique incision through its coats. It sometimes yields a pretty abundant flow of blood with eminent advantage, at other times only suffering a few drops to escape. I need hardly add, that it is the inflammation of the organ itself that urges the performance of this operation. Blistering the cheek also we generally

add to it, and if the case is very violent, a copious bleeding from the neck also, and repetitions of it. Some persons in performing this bleeding of the eye pursue a ceremonious course of twitching the animal first, and putting him to a good deal of pain, which is for the most part superfluous, as by rubbing his face freely with the hand containing the lancet, the puncture can be made so suddenly, that it is done before he has time either to move or think of it, or make any defence, which mode we have nearly always pursued, and with perfect success.

The Venæpalati, or Palate Veins, are conveniently situated for opening, by making a transverse incision upon the palate with a lancet. We have resorted to it in relaxation of the palate, termed the lampers or lampas, perhaps from an imagined resemblance to a lighted lamp or lantern, the parts being dependant and red. Some say they have been deterred from this practice by the difficulty they have experienced in stopping the blood, and there may be difficulty in this respect in some cases. In the very few where we have performed it, we have not known any ill consequences result from it. It certainly makes an uncouth disagreeable appearance, and we are not assured of it having much useful effect.

On Bleeding from the Radial Vein, running down the inside of the fore-arm, which can also be opened, and was a very favourite proceeding of the old farriers, who declared every lameness they could not well understand was a shoulder lameness, and then this vein being nearest to the part was fixed upon for being opened. It appears also to be the corresponding vein to the vein of the human arm which the surgeons find most convenient to bleed from. It is however but ill placed in the horse for being opened, and has the serious disadvantage and objection of being much enveloped in the fascias and tendinous expansions of the part, therefore apt to swell and be troublesome afterwards. It is a vein also that does not usually yield any great quantity of blood, and therefore is at this time but seldom resorted to. It was called by the old French mareschaux *La Veine Plat*, or Vein of the flat, and also by our old practitioners the *Plute Vein*, no doubt from its occupying or being situated in the inside of the flat part of the leg, for we received at that period our farriery, and terms, very much from the continent, and especially the French. For affording a good local and much less general bleeding, it seems of too insignificant a character to deserve being further dwelt upon.

On Cupping the Horse. There appears no absolute necessity for denying to this animal, on account of his hairy skin, the advantage of this invaluable remedy, a little soap and a razor soon remove these hairs and then a fair surface presents. His skin though less vascular probably than the human, is more so than the ass's, and will yield blood sufficient to the scarificator. In peripneumony or in enteritis we may perhaps more especially avail ourselves of this aid, applied to the abdomen or thorax. I know not what difficulties may attend it, from my own experience, having never used it, but my friend John Field has employed it and speaks favourably of it. It may be used also in bruised parts enlarged and swollen in the upper muscular parts of the limbs, and whether on the cheeks or not I know not, in eye cases: I leave it therefore for future inquiry.

ON BLISTERING THE HORSE. A means much resorted to by the human Physician, and not less so the Veterinarian for the mitigation or removal of a variety of diseases, internal as well as external, relieving in both cases probably by its strong irritation and counter impression upon the parts adjacent to the disease, thereby obstructing its progress and sometimes wholly removing it, and perhaps on the principle that two morbid actions cannot well, or only with difficulty, be maintained in the same system at one and the same time. On this account it is particularly useful in internal inflammatory diseases and affections of the viscera, and not less so in reducing morbid enlargements of bone or thickenings of tendons, ligaments, or periosteum, superseding with great advantage often the application of the actual cautery, and considering the great simplicity and nature of the remedy, in a way that is truly and really wonderful.

These beetles, (*Lytta vesicatoria*,) cluster I had almost said, in the trees they inhabit, contrary to the habits of most others of this race, at least they congregate in considerable numbers, and from which one would be almost led to imagine they were more expressly designed than other insects by their beneficent creator to do these invaluable offices for the human race, though I believe most other insects of this class would have much the same effects, and perhaps even ants and flies if dried and powdered. In my rambles in Switzerland about the year 1798, which I recur to with feelings of delight, I often met with this beautiful insect, in the woods and delicious valleys about Chavorney near Orbe, at the foot of the Jura, chiefly on the Privet bushes collected in considerable numbers feeding on the leaves, after getting used to them I could scent them at some distance and even before I got sight of them, from a certain musty smell not very unlike a neglected cupboard frequented by the mice.

These beetles, vulgarly called flies, and in the late human pharmacopoeias designated *meloe vesicatorius* of Linnæus, are now changed again to *lytta vesicatoria*, because Fabricius has thought proper to change the generic name, and the Dispensatory makers have followed him; it is however much to be regretted that officinal names should thus be subject to capricious changes of this sort, and these beetles having for a long time and not very improperly been called *Cantharides*, we shall continue that appellation in which there can be no misunderstanding or confusion. It is certain however the insect employed by the ancients under this name for this purpose, was not the same we now use, though of the same genus or natural tribe at least. This blistering quality is found by the chemists to reside in a peculiar native oil.

Perhaps the singular phenomena attending the operation of these flies on the human or brute skin have never been satisfactorily accounted for, that with so little comparative excitement, pain or disturbance, or indeed much increased heat of the part, they should excite the cutis in such a manner as to cause it to throw out a great abundance of lymph, and raise the cuticle entire from its surface, rendering visible an important part the keenest eye or finest dissection could hardly alone be able to exhibit. It would almost appear as though the exhaling mouths of the cuticle were stopped, and permitted not the excited lymph to escape through them, and thus caused this fine membrane to be raised in one entire piece to almost any extent. Violent mechanical friction however will do the same thing, and even hot water; still the essential oil of the cantharides without any heat or friction does in a singular manner operate the same effects. The pricking sensation which attends the

blister may be perhaps from the elevation of the cuticle, in its leaving the skin, to which it had strongly adhered.

The vesication of the horse's skin is attended with some rather remarkable circumstances, the effects of the cantharides being somewhat different from the human, a much less degree of intensity of their application will excite a blister in the horse than would be required for the human skin, arising apparently from a more acute sensibility in the skins of animals covered with hair, and which acuteness and susceptibility of feeling may have been given them perhaps by their beneficent creator in order to their better protection from the numerous host of their external enemies; whether the hair has anything to do with it, or that it is that the nervous distribution is different I know not, but so it appears; for the dog's or the horse's skin is most violently affected by the application of oil of Turpentine which a man may wash his hands and face in with impunity. This excitability of the skin among cattle keeps them in a perpetual state of apprehension and motion during summer from the teasing of flies, of the blood-sucking tribes, and also those that by depositing their eggs with them, not only agitate them by their present operations, but leave them also a resident permanent stimulus, which abiding in their stomachs, or under their skins, keeps up an almost perpetual irritation, and in hot weather a necessity for motion and excitement of some kind, which appears to be a salutary means of saving them from the effects of an idleness and inactivity which their stomachs when full, and the weather hot, would dispose them to give way to indulgence to their great injury by the invasion of diseases and of indigestions to which they are but too prone.

Now in regard to artificial stimuli, or irritants of the skin, if we were to notice them in the order of their effects, we should commence with the mildest as the *Fat oils*, and terminate with the *Red-hot iron*, or actual cautery, applied in lines more or less dense, and which, on account of its painful nature, ought not, we apprehend, to be resorted to, but in cases of extreme necessity, being but an unworthy return for injuries received in our service often, by a cruel and unnatural demand of labour and exertion.

From this excessive irritability or susceptibility of the skin of the horse, it is found that the *milder oils*, and even animal *fats*, will occasion an increased warmth in the surface to which it is applied; even *Hogs-lard*, or *Horse-oils*, will do this, as we have frequently noticed; also the *oil of olives*, and *linseed oil*, which afford an irritation of the mildest kind. If a more impressive excitement be thought requisite, it may be readily obtained by the addition of any of the vegetable essential oils, as the *Oil of origanum*, or the *Oil of turpentine*. Sometimes, for distinction, the old farriers used to call these applications *sweating oils*, adding, very often deceived by names, as another oil, the concentrated *oil of vitriol*, or *sulphuric acid*, which, when mixed with the former, produced a pungent unpleasant application, creating great heat in the part and much uneasiness, and often increasing the lameness it was meant to allay, for it was often injudiciously applied in recent strains and injuries, where already there was too much heat and inflammation going on in the part. No sweating however, we should apprehend, is ever produced by it, but an anomalous excitement of an unpleasant character, attended with a peculiar and disagreeable smell, given out apparently by the part so treated. Acids, particularly the mineral acids, do not appear to have any

proper vesicating properties, but attacks the skin as a corrodent or escarotic, acting destructively on the whole general structure of the part.

The unctuous oils can be easily rendered stimulant in different degrees by mixing with them, in various proportions, the hot essential oils of plants, as the oil of origanum, &c. and next to these, we pass on to the further exciting actions of the cantharides, for whilst naturalists are making their almost continual changes in the nomenclature of this department, and indeed in all others of natural history, it is not safe to use any other than the commonly understood officinal name.

In the application of these insects to the horse's skin, it is only necessary to mix them with almost any kind of oil as a vehicle, and if they are fresh, or have been well kept in the dry, their effect will be pretty constant; as however this part of the subject, that is, as to the arrangement and proportions to be observed, is the proper business of the *Pharmacopœia*, we must therefore refer the reader to our labours on that head, where he will find three very useful *Formulae* given viz. *common blister*, *strong blister*, and *moist blister*. The latter we know not how better to express or name, though not exactly what we could wish, for we found in the course of various experiments on this subject, that the addition of a little rosin to the blister, dissolved previously in oil, caused the blisters or vesicles to vastly augment in size, and apparently by keeping the parts from getting too quickly dry. Vid. *Pharmacopœia Equina*, 3rd Ed. p. 38.

It is usual however, in order to increase the action of the cantharides, and it may be sometimes to economise the use of them, to add oil of origanum, which serves also to afford an agreeable smell, which those who are accustomed to it expect to have in a stable where these processes are going on, or they perhaps are not so perfectly well satisfied with them. It may be also proper first to observe, that the hair of the part must be carefully removed previous to the application of the blister. It was very much the practice formerly for chemists, who love a compound, to add the *Gum Euphorbium* to the blister, and also many other articles. It is however, we believe, much better omitted, the cantharides and oils doing all that is intended, or indeed really required, for simplicity is always better than complexity, making results more certain, and in cases of failure, inferences of the cause not so difficult to be understood. In order to ascertain with more precision the real effect of this Euphorbium, we applied it with oil alone to the leg of a horse, and a dry, hot scab was the consequence, and but very little or no vesication, that we afterwards omitted it without any visible detriment to the effects of the blister, which acting well, there is a copious discharge of serum, of almost the thickness and consistence of honey, from the skin of the legs.

It is a common practice also with the farriers to mix *Corrosive Sublimate* with their blister, and where it may be desirable to destroy the skin this should be used, but not otherwise; for it is no vesicatory, but a most violent escarotic, soon destroying any living matter it comes in contact with; and we have seen, from the ignorant use of it, the most deplorable effects, bringing away extensive sloughings of the skin, and even penetrating to the parts beneath, and so injuring them as to render the horse for ever after unserviceable, and indeed made it necessary his being immediately destroyed.

There is one effect however produced by the cantharides on the skin of the horse, and which, as far as we know, has not met with much attention, and that is a prodigious general thickening of the

integuments, which sometimes does not subside for weeks, nay whole months have not been sufficient for its entire disappearance. A blister, therefore, not producing these effects, which are not constant however, would be a desirable thing in the Veterinary Pharmacopœia.

In this general notice respecting blistering, which we are now taking, it may not be out of place to notice another cutaneous irritant, *The Pyroligneous Acid*, or that empyreumatic acid obtained by the distillation of wood in close vessels, which proves a cutaneous irritant, or rather cleanser, of very valuable properties, especially in cases of rough, hardened skin, and in mangy horses, the skin being simply wetted with it, it slightly inflames it, and occasions it to peel off, bringing away with it any foulness that may be adhering, and greatly reducing the hardness of the skin. It may be perhaps also applied as an ointment mixed with lard. Great assiduity and perseverance however is often necessary where the disease through neglect has long time existed.

It may be excusable also to notice here another way of exciting the skin, which has been of late years very fashionable, though at the present we do not hear so very much of it, and that is what the French call the *mora*, a sort of Fungus prepared with nitre, &c. which is slowly burnt on the part, or otherwise of cotton dipped in spirit, which answers pretty much the same purpose. With our patients it is hardly likely it will ever be much resorted to, as the heated iron, or actual cautery, in various degrees of heat, will supply us with a less tedious substitute. We may also notice a suggestion of the ingenious Sir Anthony Carlisle, which may be of eminent service where the cantharides or other irritants cannot be obtained, which is to employ an iron of a proper figure for the part, heated in boiling water to 212 degrees, when it is applied to the skin, either naked or with thin linen interposed between; his communication on this subject may be seen in the *Lancet*, vol. xi. p. 315.

Also in this general view of the whole family of the *Skin-frets*, or *Cutaneous Irritants*, we believe we ought not to pass over entirely unnoticed those which nature herself seems to have provided, no doubt for very wise purposes. In this remark we allude externally to the flies, and to the cutaneous bots of domestic and wild animals, which live beneath their skins, in the grub or larva state, keeping up a continual irritation there, as in oxen and various other animals, tending to divert affections of the head, and perhaps bowels, and to keep them on the stir in warm weather, when too much disposed to be idle. The sheep are particularly wrought upon by them, being lodged in their noses and crustaceous sinuses of the face and throat, and so are the antelopes, deer, and other wild animals, intimating to us thereby, as it were, the great usefulness of such excitors. And again, from the skin we may go to the stomach-irritants, which we find acting as extensively, there being not less than four distinct species found within the horse's stomach alone, and as the lining of the stomach and the skin are one continuous surface, as it were, passing by the intermedium of the lips from one to the other, so by a continuous connexion, they are well known to be attended with sympathies in common, and acting therefore in concert for the general good. These, we believe, may be called into action, perhaps artificially, more extensively than they have ever yet been, and in the *Cuterebræ* and the *Æstri, Genera*, will be found objects not unworthy our research and attention. Perhaps, at a future day, the art of administering these stimuli may be known; at present, exposure in places where they most prevail seems to be the only practicable means of doing it.

BLINDNESS, *Ophthalmia*, a disease very frequently happening to horses. The eye of the horse is subject to various diseases which may occasion blindness, as the *cataract*, the *gutta serena*, the opacity of the cornea, or its coverings, &c.

The disorder however, generally inducing blindness among horses, is the *Cataract*, and the inflammation of the external parts of the globe of the eye, which precedes the obscuration of the crystalline, is usually termed blindness, as though the disease was really confirmed, so that horses so effected are considered as such, and denominated blind, though at this period of the disease the sight is only rendered imperfect, or with a prospect of it.

This destructive disorder in general commences with an inflammation of the outer coats of the eye, as the *membrana conjunctiva*, or *cornea*, or both together, and extending gradually to the interior, inflames and destroys the transparency of the crystalline, and obstructs the admission of light, producing blindness.

These attacks of inflammation not unfrequently disappear for a time, or, at least, become much less distinguishable, and then return again, observing something like regular periods of accession and remission; and from hence the disease has been termed by some the *moon blindness*, and these changes were considered as under the influence of this planet, and corresponding with the periods of its change; there are, however, other causes more powerful in their influence, to which these changes in this disorder may, with more appearance of truth, be attributed, as improper exposure to excessive cold, drafts of air, a close, low, overheated stable, or sudden alternations from the one to the other; violent exercise and sweating, then washing with cold water, leaving the hair drenched with it; acrid volatile salts rising from the dung; over-feeding with too hot, dry, and stimulating food, and all other causes, which inducing an increased action of the heart and arteries, naturally tend to induce a recurrence of this complaint.

As this disease is one of the most interesting in the veterinary art, and the most necessary to be well understood, as well by professional men, as by dealers and possessors of horses, we shall describe at some length the appearances by which it is known to exist, and the means that have hitherto been employed, as far as they have come to our knowledge, for the removal of it. Those who may desire to be acquainted respecting the information possessed by the ancients of this complaint, and their practices for its cure, may be referred to the writings of Absyrtus and Vegetius: the latter, in his elegant work, *de arte Veterinaria*, lib. 2. cap. xvi. *de suffusione oculorum*, has divided this disorder into three kinds, under the titles *stenochoriosis*, *protophoriosis*, *hypochoriosis*; by his definitions, however, of these three kinds, it appears that he only meant the different stages of the formation of the cataract, from the first inflammation of the eye, to the crystalline becoming perfectly opaque and bursting its capsule, rushing to the anterior chamber of the eye, and resting like a white opaque ball, against the cornea, occasioning a total loss of sight, and which he compares to the yolk of an egg bursting from its situation in the centre of the egg, and to which it can never again be reduced. He considers the cause of this complaint to be the rupture of the membrane containing the sight, by excessive heat, or more certainly from the fatigue of a long journey, or the neglected injury of the eye, from the inattention of the master. His *hypochoriosis*, which appears to be the first stage of this disorder, he says, descends from the

head, and often shows itself in one eye, and then migrates to the other, and is attended by a flow of water or tears. His treatment is to bleed often from the eye-lids and from the temples; to foment frequently with warm water in which rue and fennel seeds have been boiled; to anoint the eye "*cum collyrio et opobalsamato*"—remedies we hardly know at this day. He also recommends the actual cautery to be applied to the temples above the veins. This author in another chapter recommends in this complaint, that you should inspect the nostril on the same side with the morbid eye, and you will find a small opening, through which, by inserting a pipe, you may fill the eye with wine and relieve the disorder; a remarkable proof of the minute and accurate observation of these ancients. The existence of such an opening (for it is in reality, the opening of the lacrymal duct that is alluded to), is not known to many who profess to practice on the diseases of horses at this day.

Absyrtus, a Greek writer, who lived about the reign of Constantine the Great, and prior to Vegetius, recommends in this disorder, and which he calls *καταρρα*, that the ear should be pierced with an awl, and a piece of white hellebore should be inserted in the perforation for relief. At this day the ears of milliners' girls and apprentices are pierced to improve their sight and render them capable of small work.

The following we venture to give as a more natural and true description of the appearance of the eye, during the presence of this complaint, than has before been exhibited; though, no doubt, subject to many omissions and imperfections, which future observation may lead to the rectification of.

The earliest indication of this disease is exhibited by the external transparent parts of the ball of the eye becoming obscured, assuming a blackish glassy hue, sometimes blue or brown, or a dull opaque white, and streaked with blood, according to the degree of the inflammation or the distension of the blood-vessels, admitting, according to their capacity, the different parts of the blood which are not transparent; and this inflammation, it may be remarked, takes place more frequently in young horses of five or six years old, than in those of a more advanced age, and the upper half of the *cornea* generally appears more obscured than the lower; this however may be a deception, arising merely from the point of vision, the observer being placed below the eye, and seeing directly through the lower part, but more obliquely through the upper. The blood-vessels also may be observed increased in number and size, passing over the opaque white surface of the sclerotica in order to go to the *cornea* and *conjunctiva*; for it has not, as far as we know, been ever ascertained from actual dissection or experiment, whether it is the cornea that is inflamed, or the conjunctiva, or both; nor is it absolutely necessary for the treatment, that this should be actually ascertained.

The eye and eye-lids feel hotter to the hand than usual; and often times there is a deposit of a white matter resembling pus, in the bottom of the anterior chamber of the eye, and which, perhaps, proceeds from the vessels of the ciliary fringe, or uvea, which are particularly large in the horse depositing it.

After this opacity of the coats of the eye has existed some time, the eye of itself, or still more certainly if antiphlogistic means have been used, returns to its natural brilliancy, and the disorder seems

removed; and a few weeks or months may elapse before its return; and if proper remedies are had recourse to very early, the disorder may be often permanently removed; it very frequently however does return, and again disappears, and this several times before the inflammation of the crystalline, and the destruction of sight takes place. In other subjects, one uninterrupted course of inflammation, without any interval, takes place, till the cataract or opaque crystalline is fully formed.

When this morbid process begins in the crystalline, the inflammation of the exterior parts of the eye often disappears, and they assume their usual brightness and transparency, which affords us an opportunity of distinctly observing the changes which take place in the lens.

And, with respect to the cataract itself, or the opacity of the lens we may remark, that the whole crystalline shall assume a milky appearance at once, or a small speck only near the centre shall be seen, which often remains for years, without the least perceivable increase, and without producing blindness, or any sensible detriment to the animal: in other cases, no speck is observable but whitish lines which reflect the light, stretching like rays from the centre of the lens to its circumference; and sometimes the capsule containing it, is said to be only affected.

The cataract, as it is called, being fully formed, the complete opacity of the lens being established, and the light being no longer admitted, the iris begins to lose its properties, nearly closing up the opening of the pupil, from its relaxation, and the whole eye becomes diminished, and apparently sunk in the head, and the capsule, especially in draft horses, bursts, and the lens is forced from its situation, and falls into the anterior chamber of the eye, subsiding there and resembling as we have before observed, an opaque white ball.

As perfect clearness and distinctness in all parts of the eye, with a due contraction of the pupil, are the most certain indications of its goodness, so the slightest dullness or opacity in the external coats, or diminution of the pupil, should lead the purchaser to be cautious; for it cannot be too often observed, that this opacity of the coats, after it has been of some standing, is almost certain destruction to the eye: and there are no remedies at this time known that can prevent its fatal termination, though numerous attempts and experiments have been instituted with this view; and the operation for cataract is useless in the horse; for if it succeeds, the vision would be still so imperfect, that blindness itself would be preferable.

Though various useful offices can be found for horses that have lost their sight; yet it is of importance for most of the purposes to which they are applied, that it should be preserved. We cannot recommend with too much force therefore, the necessity of an early recurrence to the prescribed remedies for destroying the inflammation; for, at its very commencement, it has probably only the characters of common inflammation, and might be entirely and effectually subdued as in other parts; but neglected, this disorder soon assumes its peculiar properties, arising perhaps, from the particularly delicate structure and functions of the parts affected, that in a short time it becomes perfectly beyond the reach of any remedy; for though, no doubt, there are insulated instances where this disorder has been removed, yet, as the termination of the generality of cases is of an opposite nature, it would be unwarrantable to make the conclusion from such cases of the general possibility of cure in this complaint.

Where the inflammation has not yet received the specific properties above described, the following remedies will frequently remove it; and in more confirmed cases, we shall mention the means that have been unsuccessfully employed for this end, that we may show the insufficiency of such attempts, and promote further experiment and research respecting it.

In the very commencement of this complaint, the abstinence from heating food or hard exercise; exposure to stables of cooler temperature and well aired, not from partial drafts, but their loftiness only; exclusion of too much light, or of the light altogether; diluent drinks and purgatives may be employed to the general system. To the part itself, washes of cold water or ice and water, or litharge water, the latter however has been found by Wheatly, an eminent surgeon, to discolor and thicken the parts if much used, or water with a minute portion of opium dissolved in it; others think more favorably of stimulating or caustic washes, as weak solutions of the sulphat of zinc, very dilute acids, or even spirits and water.

Blisters applied to the cheek or over the masseter muscle, care being taken that the fascia over the muscle is divided, otherwise there is no suppuration; produce an irritation which is very successful in removing this inflammation, and in particular the insertion of a seton or two in the muscular parts surrounding the eye: these will tend, as we have experienced, powerfully to carry off an attack of this disorder. Firing with a hot iron has also been employed with the same view, on the surrounding skin; and likewise blood-letting from the jugular vein, or from the temporal artery, or locally from the vessels proceeding from the inner canthus, or anterior angle of the orbit; also scarifying the vessels passing over the sclerotic coat, which become very much enlarged and visible in this disease, as those also in the lining of the lids.

Mr. Coleman, the professor of the veterinary college, seared up the vessels of the sclerotica with a hot iron, forming an entire circle round the ball of the eye, at some distance from the cornea, to prevent access of blood to this part, and so endeavoured, mechanically, to put a stop to the inflammation; it was found however insufficient to destroy the disorder, and we believe that any hope of relief from this cruel mode of treatment has since been entirely abandoned; and for this reason perhaps, the experiment has proved insufficient, that when communication is stopped from the exterior vessels, there are others whose trunks are short of these, which supply the substance of the cornea; and others again, out of our reach, on the inside of the cornea; but above all, the habit in the parts to disease, and the disposition in the system to generate it, are not overcome, the morbid tendency is not thereby destroyed.

The farriers who practice medicine, in treating this complaint, often remove the lacrymal gland (*caruncula lacrymalis*,) which they call the haw, from its supposed resemblance to this fruit, and as this part partakes of the inflammation, and is much swelled, they mistake it for the source of the disorder. The removal of it, which is easily done by drawing it out with a fine hook and cutting it off, occasions a copious discharge of blood, which in slight attacks may relieve the eye and encourage them to the practice; but from our own personal experience we have learned, that in cases of any duration, it is totally inadequate to the removal of the complaint, and that the eye must obviously suffer from the loss of a part necessary to its well-being, as it collects and conveys the tears away; and since means less injurious to the eye may be equally well employed with as much or more success, such as we have before pointed out.

An infusion of the *polygonum hydropiper* injected into the nostril, so as slightly to inflame the membranes of this part, produces very good effects in this complaint.

It has been observed, that in the human eye, long continued inflammation of the exterior coats rarely produce cataract as they do in the horse; and the reason that has been assigned for this is, that the same blood-vessels which supply the *tunica conjunctiva* and *cornea*, supply the lens and the humours of the eye of the horse, which they say is not the case with the human, these parts being supplied from the eye-lids and integuments; there is however, in the horse, a singular propensity to inflammatory complaints, arising perhaps, from their highly stimulant food, the cessation of the growth about the fifth year, and from much hard work and exposure at this period; and to which disposition and to these causes perhaps it is rather to be attributed.

In the inflammation of the cornea, which is attended with a black, glossy appearance of this part, there is seldom any increased discharge of tears from the eye and nose; but in the other kinds which we have before enumerated, there is in general a considerable increase of this secretion. When blood-streaks or blotches appear, it is probable that the vessels are ruptured, and that this blood is really in a state of extravasation. Copious bleeding however from the jugular, often repeated purgatives, with counter irritants and light food are chiefly to be depended upon in reducing the inflammation of this organ.

BROKEN KNEES. The situation of the rider on the falling of his horse is often a truly pitiable one, as these accidents generally happen suddenly and at unawares, and he may be quite unprovided for such an unlooked for occurrence, and sometimes also the rider may have suffered with his horse; to make the best of his calamity we would venture to recommend the following course to be pursued in respect to his horse at least, leaving him to his own resources in what respects himself.

To draw forth his handkerchief and turning two of the corners of it to the centre or middle of the handkerchief, and folding it again, apply it in front of the knee, bringing the other two ends to tie behind, or in front, as its length may permit; first taking care if there be any loose flaps of skin, to lay them in their proper places, wiping out with the fingers any casual gravel or stones that may be adhering to them or to the general surface of the wound. Tie moderately and not too tight the handkerchief, and pin it if possible above and below the knee to prevent its sliding off.

Now lead the horse quietly to the first convenient resting place, for there cannot be much pleasure or advantage in riding a horse that has been so injured and disfigured, or if riding to a distance be imperative, let it be done with all quietness and caution. If no veterinarian be found at hand to undertake the case, we recommend the following manner of proceeding:—

First, in order to obtain as speedy and as sightly a cure of the wound as may be, and especially as to the latter, that of preventing as much as we can, any very material disfiguration of the parts, which at this present time is often frightfully the case, and diminishes the value of the horse, from the proper degree of digestion and healing the wound not being properly understood, the former being often carried on too long, and the latter at last suffered to take place by a general exposure to the air, thus making a large unsightly scab, which may cover nearly the whole surface of the original wound.

If the handkerchief applied as above round the torn knee be left on for four and twenty hours, the wound being thus wrapt up in the warm blood, no great harm could arise from it, as during this time, many of the loose points of the flaps and torn pieces of skin would be found to have adhered to their proper surfaces and attached by vacular connexion, such should be carefully suffered to remain undisturbed, and the blood which covers the wound should not be too assiduously removed, except when the masses of it are very dense and black. The general wound may then be washed over extremely lightly with a piece of tow or soft rag, dipped in Tincture of Myrrh or of Aloes, or if these are not to be had, with brandy and water, but if the parts are much bruised and hot, with simple cold water.

When however it shall be deemed necessary to remove the handkerchief, whether after twenty-four or forty-eight hours, if the lacerations have been considerable, it should be proceeded in with extreme caution and not at once, but by gentle degrees, using warm water to relax it if the adhesions be strong; for the blood is as a body of firm glue when dry, and passing between the threads of the handkerchief, it becomes as it were part of the general mass, or if a veterinarian be at hand or the rider be so provided, a calico bandage should be used, made by tearing a piece of calico of about a foot or eighteen inches square into five tails on the two adverse sides, leaving an entire piece in the middle for covering the front of the knee, which is perhaps the most simple bandage that can be contrived.

If we wash much in the early stage of the business, we wash away our best friend the blood, and if we probe much or grope it about, we shall remove points that are uniting, by gratifying an idle curiosity, the objects of which could avail but little, if known.

In wetting the handkerchief, I would not advise doing it more than was just sufficient to set it at liberty without unglueing the parts that had united, as yet very tenderly, removing however any hanging or dense masses of clotted blood, since blood is the best possible bond of union of living parts, and there can be no substitute provided like it; however any portions of it that only hang about or are become offensive are to be drawn away. The wound having been put in order and the parts brought as near their natural position as possible, we would give them a further time to unite and confirm their adherence before we begin to digest the more naked and exposed parts, by the applying a thick pledget of tow, in the lightest manner tallowed over its surface to prevent a too strong adhesion and sticking in the wound, then the bandage above described being applied over it to retain it in its situation, we leave it for another twenty-four hours.

At the third or fourth dressing, the deeper cut parts which may have been damaged by rough sharp pieces of flint or of gravel stones, should be dressed alone with small bits of lint covered with digestive, leaving the other parts to the general pledget not densely soaked, but lightly covered, so as to prevent any injurious sticking in the wound, as by dryness, or rather absence of moisture, the less injured parts will best acquire their powers of union one to another and to the general surface; this in a very few days will be accomplished as far as it need be carried; we have then only to attend to the denuded and deeper cut parts, perhaps in some cases with the sheath of the front extensor tendon cut or removed, when we now apply to the whole general surface a pledget of tow, thickly smeared with resinous digestive of stiffish consistence,

sufficient to ensure the exclusion of air and the reaching the bottom of these cut points and digesting them. Granulations will rise and successively fill these vacuities till they attain the general level of the sore, and will, if we go on digesting and excluding the air, rise higher than the surface, and perhaps become troublesome to reduce; the digestion therefore should not be proceeded with as is too often the case at present, till the wound is healed, but having attained to this point which is usually the case in a week or two—we then omit the dressings for a day or so, exposing the parts to the atmospheric air, which is the best drier we have, and closes, or reduces at least the extent of the sore, and permits the healing and skinning process to have their full operation round its edges, more particularly by the surrounding skin extending itself and creeping upon it, leaving the centre however naked, and in its granular state, that is, if the wound be large, and we have all along supposed such to be the case.

This process, if continued, will only extend from the circumference of the sore to a certain point, where it will stop leaving the central parts in a naked state, which then will make an attempt at a scab, leaving a sore of a wider and more unsightly appearance when dry, than is at all necessary, for after this exposure to the air, we again resort to our digestive, and, covering it up we shall put the parts in a state, by their renewed suppleness, to creep further over the surface of the sore, and very much to diminish its extent, not however continuing it more than a few days, when again we expose it, and thus get it by slow degrees, to almost close up: in this way I have often seen a sore larger than a crown piece brought into the compass of a silver fourpence.

When the part has scabbed over, it is best that it should be carefully protected from being hastily or suddenly forced off, as the skin has opportunity, thus sheltered, to heal and diminish the extent of the sore under it, but if it be torn off, and exposed to the air too suddenly, drying it makes a more broad surfaced patch, which never afterwards much contracts, and sadly disfigures the limb, or perhaps by such violent evulsion, tears open the wound and renews it; it should not therefore be allowed to scab before it has contracted to a small space, using a little tallow only for the last dressing, such being a sufficient covering. For nothing can be more senseless and mistaken than the manner in which these cases are often treated, leaving the knees a horrid spectacle of bunches and large scabs. On a recent injury of this sort, a common application of the grooms and farriers is gunpowder and lard, which by its blackness, certainly very much conceals the mishap, but as the gunpowder is chiefly made of nitre, and nitre has no digestive or healing powers, and applied to a wound, will probably have the effect of keeping it in a negative sort of depression and chill, and at length, which is usually the case, getting wiped off or dried up; the wound is left without a covering, exposed to the air, and quickly forms a large scab of the extent nearly of the original injury.

We may now consider another also not very unfrequent condition of the accident; and instead of a violent laceration of the skin and subjacent parts, we get perhaps only a very severe defrication or scrubbing, from the great force with which the parts have met the ground, and from the weight and actions of the horse at the time of the fall, attended with a loss of the hair, sometimes of the cuticle, and it may be, extending also to the *cutis vera*, destroying the roots of the hair, or partially injuring them: this state of things, though not in

appearance so terrific, yet in the cure may be attended with more difficulty, or at least requiring more consideration and attention than a mere laceration of the cuticular covering, that is, in the obtaining a good surface of natural looking hair upon it, without its being white, short, or curly, since it may be often observed, where hair has been much disturbed or removed on the shoulders, withers, or sides of the animal, by the defrication of the harness, that white hair usually succeeds. To prevent such a result as the friction which attends a fall, if severe, is ever accompanied with a great heat of the parts; first and as speedily as possible, it is proper to foment them with cold water, and even if none such be at hand in the moment of the accident, it may be well to lubricate them with saliva, which not drying very rapidly, may be of some help in such a case.

To procure a favorable state of the skin for re-producing the hair, the constant application of grease of some kind to the part is necessary, perhaps tallow from its oiliness and consistence may be as good as any; if it should be thought not stiff enough, a little bees' wax may be added to it, and if the hair be of a dark colour, a small portion of pitch melted with it would afford it; lard has the objection of becoming too thin and fluid from the heat of the parts, to be long retained upon them; it may however by such as prefer it, be united to wax or pitch in the above way, though not easily. This application should be renewed every morning till the hair is fully formed again upon the parts; and if, during the first few days at least, the application of a thin calico bandage of the description above mentioned may not be without its use, in shading and keeping the parts more cool, and obstructing the too rapid flying off of moisture; stroking the hair down in its proper direction when it begins to appear, may also very much tend to prevent its being curly, and encourage its length and proper color.

To recur again to the more common cases of broken knee, our business appears to be then not to dry up the sore too hastily, as that will disfigure the part, but to let the process proceed gradually but not protractedly, as is too much the case at present, and without much of system. As a digestive, we may use a mild, warm, resinous compound, made of common resin, softened with common olive or linseed oil. Common turpentine, the usual resource of farriers, which we consider on account of the spirit of turpentine contained in it, of too stimulant a nature and where a certain stiffness in the compound is required, not stiff enough; the former, from a long experience, we can vouch for giving general satisfaction, beyond any composition we have ever known, and also as recommending itself by its extreme cheapness; for some further observations on it, see *Pharm. Equina*, 3rd ed. p. 36. It is applied most conveniently and easily by forming a lock of tow in the hand, by the usual process of pulling it out and turning in the ends, and is then charged with the dressing, not by any knife or spatula, but simply by smearing it in drawing it over the surface of the ointment contained in a large gallipot, by which we leave adhering a mass of any thickness we desire. It was a common practice with us, in commencing this art, to use this digestive till the sore was entirely healed, which often took a very long time, and elevations of flesh would often arise; for florid luxuriant growths, if parts are left uncovered and neglected, easily arise in the horse, and are troublesome to subdue. Over these elevations of the flesh,

the skin or cicatrix appears to have but little power of extending itself, and the parts would remain a very long time unhealed, for formerly we used, as we have said, to go on digesting with our ointments to the very last; these luxuriant growths, if such have been allowed to occur, must be reduced by covering and pressure and dissicatives, and if very large, by the knife and cautery; smaller ones, if recent, a drying air will usually subdue, and the mildest measures, if they will effect the purpose, are ever the least detrimental and best. In this way, much loss of time, of suffering, and of desightment will be obviated. If sinuses form, we resort to the *conglutinum*, which usually quickly closes them.

When by carelessness in cleaning the horse, as by a too free and rapid use of the currycomb, a scab has been torn off, as will sometimes happen and should be carefully guarded against, whether on the knees, hips, or other parts, and which we have had sometimes to experience; we then have applied to the denuded and abraded surfaces, the finest scraped powder of charcoal, which adhering, would prevent an excessive discharge and ill condition of the sore, and falling off from time to time, induce a better healing, rather than by a total exposure to the air, with no covering at all, which is often inducing a florid growth; this proceeding may perhaps in many cases be further improved upon, by dusting these surfaces with Fuller's earth, steatite, or calaminaris powder.

In finishing the cure of these cases after the healing, which are at this period often neglected and not attended to, the young tender growth of hair should not be suffered to get too dry, or their roots impoverished by want of succulence, being weakened by a too free exposure, and thus grow deformed and curled; the parts therefore should be kept during this process, assiduously covered and protected, shaded by some thin soft wrapper, and the hairs be dressed with deer suet, or fat of some kind every morning applied fresh, sometimes washing the parts with a little soap and warm water, or if the part appears hot, with cold water, giving the hairs a proper direction with a piece of a tallow candle to keep them straight.

In this way, even old neglected cases may be brought into some tolerable condition, and others rendered with difficulty visible, whilst a careless treatment in drying up the recent wound with the after inattentions, would render the parts bald and unsightly to a great extent.

We have now to contemplate and consider yet another condition of the accident of the falling horse, where not only the skin is torn up or entirely removed, but where the parts beneath it are injured also, and it may be, the joint itself laid open; when so triste an affair takes place, it is, if it be extensively laid open, the best conduct, mercifully to destroy the animal and finish his miseries at once, rather than to go through the terrible sufferings that usually terminate attempts at cure in these cases, which can only be effected at the expence of the motion of the joint, viz. by ankylosis, when the animal is of little or no use; it may however happen where synovia is given out and abundantly, that the tendon only is suffering, its sheath having been damaged or removed. In this case, there are hopes that nature, if duly aided in her endeavours may repair the damage, and such we have seen; the resinous digestive is then our best resource, not using it altogether for its digestive qualities, but as excluding effectually the access of air, and affording opportunity for union to take place, under its guardian protection,

availing ourselves of its tough and plastic properties, the ointment being made sufficiently stiff and tenacious for this purpose, and liberally applied, small cases of opened joint have yielded to its application. In worse cases, it may be well perhaps to confine the knee by splints, from all motion whatever during the cure, which would we apprehend much contribute to the success of the attempt, nature a little aided by art being most powerful in her resources, although in very desperate cases, it is better at once, as we have said, to destroy. If a reparation of the breach in the joint can be effected however, there is the more hope that the horse may be rendered useful, for some low and not very violent service, by the circumstance, that there are seen two ranges of bones in the knee, and it would indeed be a hard case, that both of them should be laid open by the fall, and one would supply a slight, yet sufficient degree of motion to the joint, for such humble purpose. A most careful exclusion of the air is always necessary, in these cases, otherwise a high degree of inflammation of the joint itself will take place, with a copious flow of thin, hot, synovia, terminating the case usually by a fatal irritation, extending itself along the course of the tendons and other connected parts.

In a case where the opening is small and fistulous, a light touch of the actual cautery will have excellent effect; which seems to operate by arresting the flow of synovia, closing up the wound by a solid plug, the lymph flowing out being arrested in its course, rendered solid by the heat, gives a favorable opportunity for the union of the injured parts, by adhesion of surfaces.

We now bring to a conclusion this small essay on broken knees, without any remarks on the causes contributing to so many funeste accidents, for they are daily occurring and to all classes of society; having aforetime sufficiently exhibited that the horse is not a tumble-down animal by nature, the Almighty ever making every animal firm on his legs, that it is the effect of the shoeing with an inflexible hoop of iron, destroying by it the structure and functions of the foot, and this it is that is the cause of so much calamity, which is not only simply stated, but demonstrably proved to be the case in the work we have alluded to, entitled *Podophthora*, to which we beg to refer the reader's most serious attention. And not only are the knees of horses broken, but hundreds of valuable human lives sacrificed also to this defective and foolish principle of defending the foot; an error in principle, scarcely before suspected, and certainly not at all understood.

BURNS AND SCALDS. The horse, like most other wild animals, has a remarkable innate dread of fire, so much so, that on this alarming visitation, they are but too frequently the victims of it, and perish miserably in the flames, and are thus put beyond the reach of the veterinarian's skill: blinding them by covering their heads, is generally resorted to for delivering them from the impending danger, and their release should ever be a first care on these occasions, for horrid must be the sufferings and death of so large an animal when proceeding from this cause.

Where, after a partial exposure to the effects of the fire they have escaped, we should first propose affusions of cold water, abundantly supplied to the parts burnt, so as to take out all sense of heat and of pain from the parts suffering, which we believe from oft experience on our-

selves and others, to be the most natural, simplest, and best means of obviating its ill effects, and the sooner recourse is had to it, the better for preserving the parts from death and sloughing off.

But, although this remedy appears to be very simple, and we believe it to be the best of any, some law or discretion appears to be necessary, in many cases at least, for its administration, and which law is simply this, not to carry the cooling process too far by chilling the parts too much; for after so high excitement as the heat has produced, the sudden reduction or expelling of it, to an extreme the other way, may endanger the death of the part, and occasion extensive sloughings to take place. The point therefore to be aimed at, as it appears to us is, the point of *no pain*, which in the human can be readily known, by inquiry of the patient; but not so in the horse, where therefore more attention to indications of his feeling, and other indications as by the touch of the hand by sight, or otherwise, by which he might tolerably well ascertain the actual state of his patient. The pain ceasing, we immediately desist from our labours, by the remission of the cold affusion, and on the return of it, which at first will be after a very short interval, we again resume our labours and continue our attentions, waiting after each application to watch its effects, till the pain finally ceases to return, by which the parts may be wholly or partially preserved, and breaches in the skin, where the fire has been sharply applied or long continued, that may happen however, and cause ulcers and sloughing of those parts, such are to be treated with the mild cooling ointments, as the cerates, or the spermaceti ointment, till they are in a state for cicatrizing, when a temporary exposure to the atmosphere, from time to time, will much facilitate their closing up and skinning over, using digestives however if necessary, for the granulating and filling up of any deeper vacuities.

This salutary method of treating burns and scalds, we may perhaps best illustrate by a case which actually occurred to us, than by any generalizing upon it, and which case occurred to us early in life and was under our own notice, and direction also, in the way following; and which probably by the common methods we have been but too often witness too, of drugging and ointments, would have been attended with great suffering of the patient, and been several months in hand.

Whilst studying at the Veterinary College about the year 1794, I was one day invited, by a gentleman of Finsbury Square, sometime since deceased, which enables me more freely to speak to it, and who was a great admirer of horses and possessor also of some very remarkably fine ones, to dine with him, and after dinner wine was brought on the table from a large wine cooler or cellaret, which stood in a corner of the apartment; after an agreeable afternoon's conversation, the evening approaching, tea was announced in the next room, and from whence, very shortly after, proceeded the most violent screams from a child and various female voices were heard, and, with horror depicted in his countenance, entered my friend and host, who had but a few moments before left the dining apartment, exclaiming—"For God's sake come immediately, for I have scalded my child to death." Having, as he explained afterwards, had a few rough words with his wife, he had upset the boiling tea-urn into his child's lap, the whole contents having been received on his legs and thighs.

On my entering the room I found various women assembled round the child, whose cries had

called them into the room, who were busily employed in stripping his clothes off, and his cries were indeed most vehement; the skin seemed to be peeling off in following the stockings, and I begged of them therefore, to desist and leave him to me, and immediately ordered the capacious wine-cooler to be brought from the next room, and into it I immediately plunged the child, just as he was; and, after being there a very few minutes, he found himself so much relieved as to cease crying, and even was laughing with his mother and attendants. I now took a pair of scissors, and slipping them through his dress entirely disengaged him from it. On finding a cessation of the pain, I withdrew him from his bath, and in a very short time his roaring recommenced, and by immersion his pain again was subdued, and in this way we continued immersing and withdrawing him for nearly two hours, when, being tolerably free from pain for a long period, he was carried up stairs to a bed-room and laid on the bed, wetted cloths being applied wherever the pain appeared; and finally, as I thought they rather began to despise the simplicity of my remedy, I wrote a prescription for some goulard to mix with the water, and which was continued occasionally during the night. It being warmly solicited, by my friend, that I should proceed with the case to its conclusion, I dressed with mild cerate, sparingly applied to the sores, wherever the cuticle had been denuded by their too hastily tearing off his dress, and in about four or five days my little patient wanted no further assistance. Other striking cases I could give, but they would be much of the same complexion. I therefore desist, where by the application (not of evaporating lotions, as they are called, or dabbling with the hundred and one nostrums for burns,) immediate cold, by potentially subduing the dire effects of heat, and by bringing the parts only to their natural feeling and tone, I destroyed all the suffering, and produced a sore also that quickly healed.

So that I confess myself on most occasions, if not all, a decided advocate of counteracting the effects of heat by the direct application of cold; ill effects have arisen from such treatment, there is no doubt, but this has proceeded from not observing the laws required by the living animal economy, which should be strictly attended to in doing it, and not to do it at random. I consider this much better than the bit-by-bit process in applying moderately stimulant lotions to the parts, by which the heat is retained in the part for a longer time than is necessary, and perhaps, by its exhausting effects destroys the vitality of the parts, with injurious consequences. That there is danger in chilling the parts that have been over-heated and extremely excited is certain, as in the converse case of warming too suddenly parts frost-bitten; but then it is by abusing the remedy, and going too far with it, and running into the opposite extreme; as we have pointed out a sort of grade in doing it, such generally may be resorted to. Solid ice therefore, I would not, at any rate, in severe cases, resort to, as it might be so easily abused.

And I admit that in regard to cold affusions to the horse, after the effects of fire upon this animal, may be attended with some little difficulty to know exactly when to desist, since we cannot, as in the human, ask questions of our patient, to ascertain the precise point of *no pain*; however, it is certain that, in this respect, it is not so absolutely necessary, in usual cases at least, that this point should be so very exactly ascertained, and that if we aim to come as near to it as we can, from our own feelings of the part, and from our views and reasonings on the case, and by the animal's own indications, we shall arrive near enough to do what is required, without much fear

of any very ill consequences, and thus save the animal much suffering and ourselves much troublesome labour in the after-treatment of those ulcers that may arise.

If the water, from being procured above ground, should not be found cold enough, a few pieces of ice, if procurable, might be added to it; or, if this was impracticable, some sal ammoniac pulverized, to render it more speedily soluble, thrown in, would make it several degrees colder.

The above will suffice for thousands of common cases of burns and scalds; there are however, it must be admitted others, of most dreadful burns more particularly, and of a more extensive injury to the parts, where the system appears to receive so great a shock that she never rallies again, and, whatever is done, it is all alike, nothing succeeds; such cases, in the hospitals, treated for the most part with spirit of turpentine, generally end fatally, and death closes the scene often in rigours and chills, and where it would appear wrong to apply cold; possibly, however, if the heat had been subdued very early after receiving the injury, there would have resulted a better chance of saving the parts from death and slough, than by using measures only partially suppressing the fatal presence of this heat, by only half combating it by those stimulant or warm measures, a view that perhaps may afford a subject not totally unworthy our consideration. Desisting however, from any further speculation or suggestion on these dreadful cases, I am well assured, from frequent experience on myself and others, that the generality of cases of scald and burn, will give way most successfully to the direct application of cold, and that where ulcers do arise; they will yield more readily after a treatment of this sort than by the common treatment, which leaving the heat longer in the parts, occasions also much more suffering.

ON CASTRATION OR EMASCULATION.

ALTHOUGH many pretended improvements and novel proposals for performing this operation, are continually being presented to the public, none we believe to be better, and we speak after considerable experience, than the old operation of all. I have followed it, with an uniform success, through a practice of forty years and upwards, and with invariable satisfaction, not having ever lost a single case, though at times cutting old horses, whose lives I ensured to their owners, before the operation, at a small advance in the premium of two guineas, the usual and proper fee for a performance of this kind*.

A plan, which at first was thought highly of, for castration, by my friend Wm. Moorcroft, was by ligature,—the enclosing of the spermatic chord between two pieces of stick, or of one par-

* And which the public, we believe, should on their part be willing cheerfully to pay to a well and regularly educated practitioner, if, at least, they wish to maintain a respectable class of persons in this profession, and not to suffer it, with bad consequences to themselves and to the animals, to be subject to the reproach which Vegetius tells us obtained in his days; "*Ars*" he says, "*exiguitate mercedis jamdudum collapsa est.*"

tially cleft, so as to stop all circulation, when the parts consequently mortified and came away at the constricted part; and Moorcroft proceeded to castrate a horse in this way, but the irritation which ensued was so great that a general inflammation took place, extending to the abdomen, and which destroyed the horse. My friend Richard Lawrence tried also the same operation upon a very valuable horse at Birmingham, as he informed me, and with the same fatal results, and which, as it happened in his early practice, did him much injury.

The magnificence of the generative system of the horse is remarkable, of which we formerly endeavoured to give a sketch in the Cyclopædia of Dr. Rees, and which has, without his knowing probably of my previous labours, been partially described again by my friend J. Earle, surgeon, of Bartholomew's Hospital, in a communication read at Cambridge, 1836, before the British Association.

The almost ungovernable effects of this noble machinery on the frame of the horse, has been noticed by Virgil, in the following beautiful lines:

Nonne vides ut tota tremor pertentet Equorum
Corpora, si tantum notas odor attulit auras!
Ac neque eas jam fræna virûm neque verbera sæva,
Non scopulæ, rupesque, cavæ âtque objecta retardant
Flumina correptos undâ torquentia montes.—GEORG. lib. 3.

In some countries of the East they are said simply to crush the testicles, and not extract them; this, though simple, would seem rather an uncertain way of destroying the masculine vigour, and we should apprehend, like the above operation, would create in the end, a source of more pain and suffering than the extraction, but not having tried it, this is only mere conjecture. In France, where the crushing between two sticks was introduced, a caustic was also enclosed between the sticks in contact with the chord, formed of tallow and corrosive sublimate, cutting away the testicles at the end of forty-eight hours; now as this could not be performed without casting the horse, there seems very little trouble saved by this mode of doing it.

The ancient and common operation, to which we vastly give the preference, as being less painful considered altogether, and less fatal in its results, is done in the following manner, and requires generally no secondary attentions, which must ever be, from the situation and tenderness of the parts, extremely difficult and dangerous.

The horse being cast on a plentiful bed of straw, is placed on his back with his legs in the air, being supported in this position by a truss of hay or straw on each side of him, one of the hind legs or both is drawn forwards to the neck, or fore legs, which affords a convenient opportunity of getting at the parts. Searching for the *scrotum*, the testicle is grasped with the left hand so as to extend and present a smooth surface of the skin of the scrotum; an incision with a scalpel is then made of about three parts of the length of the testicle. Some use a hot iron, in preference, to make this incision, which we never practised, believing the other less painful, and better for subsequent healing.

The skin being divided, the testicle rushes out, and we next divide the tendinous expansion forming the *tunica vaginalis testis*, carefully avoiding the cutting into the body of the testicle; the testicle itself then presents, with its beautifully vascular surface, and is easily pressed out of its coverings and seized upon, a pair of clams being at hand; the chord is included, and held together pretty forcibly so as to stop all circulation, observing that if the animal struggles, which he is sure to do at this point of the work, to ease the clams to him, and not to resist, as that will tear the chord or its envelopments within the abdomen; the section or division of the chord with the scalpel or the hot iron, it matters not much which, as all sensation must have ceased on this side the clams, that we rather give the hot iron preference here, as it stops the effusion of blood. It is well not to divide the chord close to the clams, but to leave a full quarter of an inch of the chord or epididymis, which some think best, over, for the hot iron to act upon in closing up the spermatic artery and vein, which if close to the iron cannot so well be stopt from bleeding; it is usual, after a gentle searing, to scatter some powdered rosin upon the parts fired, and to melt it over them, for the further security of the vessel, which, if it should bleed after the operation is over, would be highly dangerous, the small projection beyond the surface of the clams is easily moulded into a neat ridge or seam, by the hot iron, that will effectually secure the vessels. The clams being now opened with the greatest care, easing away with the fingers the adhering chord from the surfaces of the forceps, as by pulling them open rudely we run the risk of tearing open again the closed vessels, which, if disposed to bleed, we again close the clams, and touch them again with the hot iron; this done, we return the parts into the scrotum, washing away any clots of blood that may have lodged there. After this searing, it is usual, and a beneficial practice we believe it to be, to wash the parts well with cold water, or goulard-water from a bottle; some fresh lard being taken we rub it into the groin, and all the parts that have in any way been concerned in the operation, to supple and ease them in the subsequent swelling and irritation which will soon take place. A considerable enlargement of the scrotum and of the sheath of the penis follows, and a discharge of yellow lymph and pus often succeed; after about a week, the parts healing and the swelling gradually subsiding, the horse is again returned to his labours.

At about two years old is reckoned the best period for gelding; the older they become, the more danger and more resistance; we have castrated however, as late as seventeen or eighteen years without their dying. The time of the year is not much regarded, nor, as formerly, the age of the moon.

The effects of gelding upon the make and shape of the horse and his passions, we shall not here enlarge upon, as not being necessary, or its effects upon his voice also. We now are induced to subjoin a few hints respecting the fatality of this operation in some hands to what it is in others, which we believe to have proceeded from an inattention to some circumstances not usually noticed: one is to be careful not to leave any of the investing membranes or coverings of the testicle undivided, but to see them fairly cleared away; some, I am satisfied, careless or ignorant wholly of the anatomy of the parts, have, on the skin of the scrotum being opened, and the testicle protruding, proceeded to use the clams; seeing a highly vascular membrane, they mistook it for the testicle, and so enclosed the *tunica vaginalis testis* in their clams, and made that to undergo

the compression, as well as the spermatic chord, which inflaming and communicating with the abdomen destroyed the animal. From momentary inattention I had nearly done this myself on one occasion, which served to point out to me this source of danger. I once castrated a young horse in Essex, for a farmer; a farrier in the neighbourhood, in a sort of bravado, castrated two on the same day, to see which would be well first; both his died, mine, at the end of ten days, was pretty well recovered. The death of the man's two colts, I much suspect, proceeded from some bungling of the above description; and this also it is, I suspect, that renders the sticks operation so fatal. This bad plan, though brought out every now and then as something new and wonderful, is as old as the days of the Romans, and was recommended by Palladius, (a writer in no great esteem in those days,) at least for the poor calves; neither the Greek writers or Vegetius say any thing about the sticks operation.

Above all things take care, in the struggles of the animal, and retraction of the parts, on fixing the clams*, to have a very light hand, and to let them follow easily and without resistance, all his movements.

ON SPAYING THE MARE. I know of only two instances of this operation being attempted, both by my friend William Moorcroft, who was a very dexterous operator: the first was on a mare procured on purpose from the slaughter-house by way of experiment, she died; the other attempt was on a valuable mare, the property of a gentleman, who complained of this animal for being continually horsing, to the offence of his lady, being employed in his curricule; she was next operated upon, and also died; that it seems however it may suit pigs, not to suit horses.

Would it not have been better, rather than sacrificing so valuable an animal, to have exchanged her for a gelding, or to have covered her posteriors with a net and tassels, &c., so as to conceal any appearances of the kind, rather than resort to so uncertain and so dangerous an alternative.

* Experiencing considerable pleasure in unravelling words, where I can, rendered often almost unintelligible by a succession of corruptions, so, as to this technical word *clams* or *clam*, which I conjecture was in its first application probably *clamp*, a common machine of the upholsterers for connecting a succession of flat boards to each other, consisting of two parallel bars conjoined by a rectangular piece, forming together three sides of a square, and by passing through two staples connects these boards to each other. The word *clam* or *clams* however having obtained a technical signification in this art, and as serving to distinguish a particular and useful instrument, we shall exactly retain it as it appears, although a barbarism and of no proper meaning in itself. Both the above titles have their origin, there is little doubt, in the Latin word, *claudo*, to close or shut.

As to the instrument itself, when properly made, we apprehend it should be moderately long, as a foot or more, including its handles, and not very wide or thick, heavy or clumsy, enclosing and bruising more of the chord than is necessary, but rather thin and light. The two blades should meet by means of a projecting hinge in two parallel lines, when at about the eighth of an inch asunder, and it should be provided also with a clasp to keep it fixed without holding whilst embracing the chord.

ON THE CONGLUTINUM. Having been among the first, if not the very first, who publicly recommended this useful article, more than forty years ago, and having given in the *Pharmacopœa Equina* the prescription for its preparation, we desisted there, as being out of place descanting on its uses, or the giving examples of it; here therefore, with more propriety, may be given a few successful cases of its application.

Having first used it with extraordinary success in cases of quittor, I was induced to use it in other obstinate cases of sinus that refused to yield to common dressings, and one of the first of these cases was a violent bruise of the leg, which had led to a disagreeable sinus, and appeared to be communicating with the sheath of the tendon, or perhaps the tendon itself, giving out much glare or synovia mixed with pus; by injecting into it a strong solution of the sulphate of zinc, the abscess soon healed, and the sinus became obliterated, that I began to suspect it might be used in many kind of cases, preferably to the knife, in laying them open, as we were used to do previously.

In cases of quittor, on using this preparation, a violent swelling usually supervened, which rendered the use of a poultice necessary after it, and which, by keeping the integuments moist and easy, very much contributed to the cure, also removing the lower part of the hoof away, opposite the injury, from taking any bearing on the shoe.

I further experienced the extraordinary powers of this remedy in procuring adhesion of surfaces and in the obliteration of old sinuses in a withers of Mr. Sheppard's horse, where a deep sinus which appeared to communicate with the extremities of the dorsal or long wither processes and which gave way to the injection and healed presently.

The next was the case of my friend, William Forster's horse, of Tottenham, which had received a violent kick on the inside of the hock, which laid bare the tendons, which could be seen working in and out of the sore, when the part moved, or he bent his leg, this also united and healed by the use of the injection in a short time, though discharging thecal synovia abundantly; in this case, however, as in some others, an abscess formed, in consequence of the sudden healing of the wound and which did considerable mischief to the joint. That this powerful agglutinent should be employed with some care and discretion, and we found in this, and other cases, the great use of largely poulticing after its use, to sooth and quiet the irritated parts and those connected; in foot cases we found this particularly necessary, as in quittor. After this I have no notes, and how the case finally terminated have no distinct recollection, having myself not seen it after.

In a case of a large grey dray horse of Messrs. Tickels, (1812,) which had received a most violent contusion and cut in the front of the gambрил* below the stifle. I endeavoured to heal this wound by the first intention, but a large abscess was left notwithstanding, and discharged a red clotted pus, like coffee grounds. I employed the *conglutinum*, and covered the external wound

* Probably from the French *jambe*, the diminutive *bril* being added, signifying the little or lesser leg, the thigh or greater leg being above it; it is in fact the muscular assemblage in front of the head of the tibia, and we preserve it, though not often used, as affording us a ready and useful distinction in speaking of this part of the limb.