

THE EDUCATED HORSE :

TEACHING HORSES AND OTHER ANIMALS

TO OBEY AT

WORD, SIGN, OR SIGNAL,

TO WORK OR RIDE ;

ALSO,

THE BREEDING OF ANIMALS,

AND

DISCOVERY IN ANIMAL PHYSIOLOGY,

AND THE IMPROVEMENT OF

DOMESTIC ANIMALS :

BY

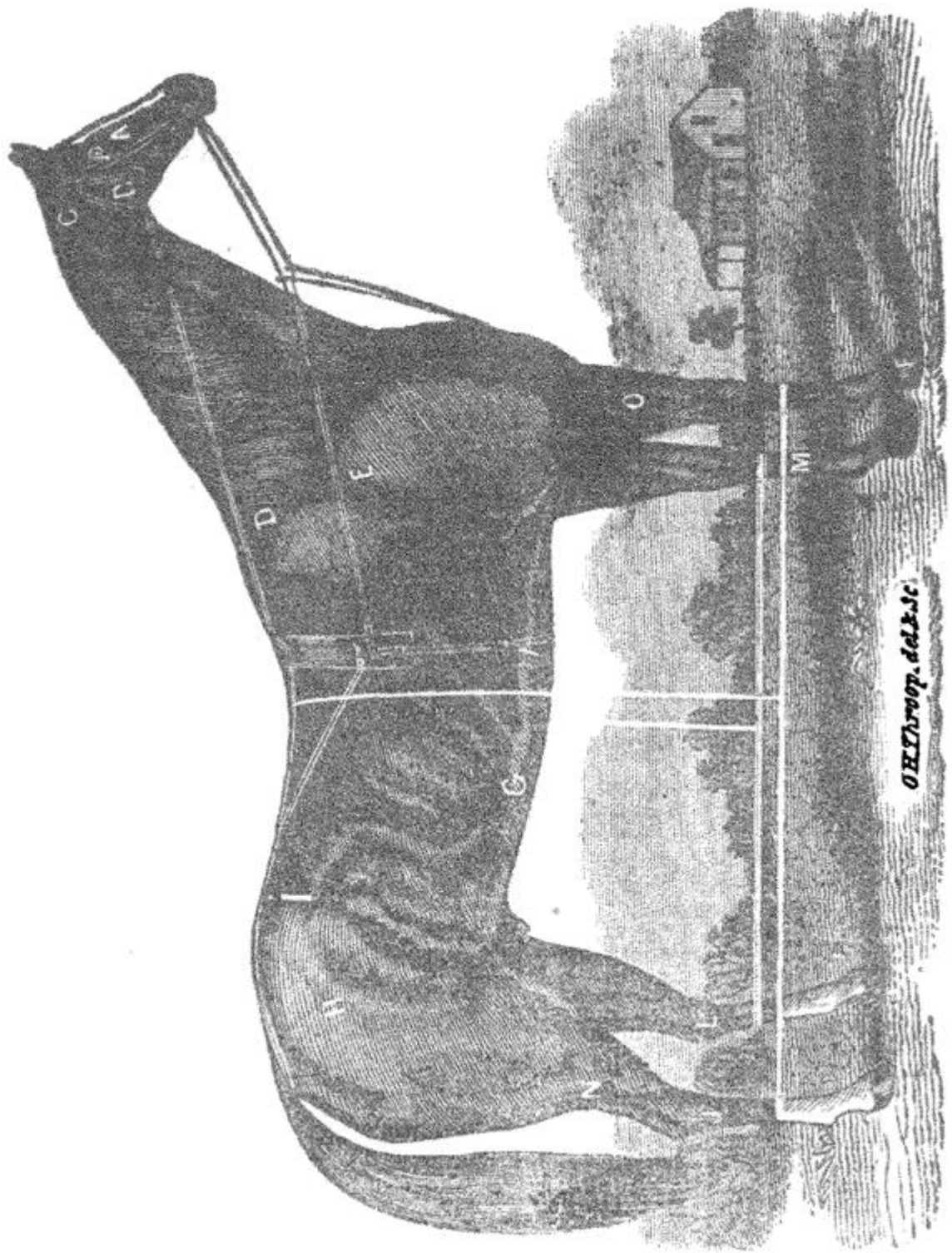
DENTON OFFUTT.

WASHINGTON, MARCH, 1854.

Entered according to Act of Congress, in the year 1854,

By DENTON OFFUTT,

in the Clerk's office of the District Court of the District of Columbia.



O.H. Troop, del. & sc.

This page in the original text is blank.

P R E F A C E .

I invite you to read the beginning. If you are not suited in one manner of explaining it to you, it will be in another—by examining all, and holding fast to that which is right.

The mind of man—the capacities of the horse and other animals, have emanated from the same Creator; and when thoroughly understood, will be found to be wisely adopted to the external world. The horse possesses, in common with man, and most of the animal species, the five external senses, by which he appreciates the existence, presence, and properties or qualities of objects which present themselves. Controlled by intellect, he is impulsive, and under the guidance of his senses, he is cautious and disposed to be distrustful. Unusual sounds put him on the alert. He snuffs the air to wind the object which has startled him. His eye cautiously scans every object within its range, and he shrinks from, or defends himself against the approach or touch of that which has addressed his caution or combattiveness.

There is as great a variety in the disposition and character of horses as exists in the human family; and this, in both, depends upon the individual organization and temperment. The disposition of a horse, and his peculiar traits of character, may be determined as certainly by a practiced eye as that of any human being. The principles of phrenology and physiognomy are applicable to the horse and other animals as well as to man. To understand these principles and their application, is one design of this book, which, when thoroughly understood, will enable any one to manage with facility, any domestic animal he may wish to control.

The horse is, naturally, an affectionate and mild animal ; and the only reason why he is not as docile and tractable as the dog is, because the same system of management is not adopted in his education. The Arab, who fondles on his horse as he would his child, feeding him from his own hand and keeping him in his own tent with his family, is repaid by having an animal which he can govern at will by a word or sign, which will single him out from a thousand, and which will never desert him. By my system, the wildest or most vicious horse may be made useful in a short time ; but all cannot be equally gentle. There are three kinds : the wild, the stubborn, and the fighting horse. You may teach some to be as kind as the Arabian.

My search in taming horses, consists in a plan of treatment based upon phrenology and physiognomy, and their indications of individual disposition and character. The timid, the obstinate, and the vicious, are not to be approached and treated in the same way. Having learned from a glance of the eye, the disposition of the animal, I adopt the tones of my voice and my manner, to his disposition, and thus convince him that I will not hurt him. By the observance of uniformity of order, patience, and mildness, his fears are removed and his confidence secured. By teaching him to look for caresses and protection from your hand, as the dog ; rubbing and patting him in the face, and talking kindly to him, you may sooth the most timid and vicious. Amply endowed with faculties of perception, by which he determines your motive or design, he can appreciate a kindness or resent an injury. " Will the Lion submit to those beasts that would destroy his den ? Will the Bear lick the hands of those who would kill the cubs ? Or will the Snake submit, without resistance, to him that would put his foot on his back ? "

If the reader will direct his attention to any material object, and consider, 1st, its existence ; 2d, its form ; 3d, its size ; 4th, its weight ; 5th, its locality, (or relation in space to other objects) ; 6th, the number of its parts ; 7th, the order of physical arrangements of its parts : 8th, the changes

which it undergoes; 9th, the period of time which those changes required; 10th, the analogy and difference between the individual under consideration and other individuals; 11th, the effects which it produces; and, lastly, if he will designate this assemblage of ideas by a name, he will find that he has obtained a complete knowledge of the subject.

In view of the fact, that every new system, whatever it may profess to teach, meets with opposition and ridicule from an uninformed public, it might be deemed useful to present in a prefatory form: 1st., a short notice of the reception which other discoveries have met with on their first announcement. 2dly, A brief outline of the principles involved that I propose to teach the dumb. 3dly, An enquiry into the presumptions for and against these principles, founded on the known phenomena of human nature; and 4thly, A historical sketch of their discovery. But as these things will be adverted to in the course of my oral instruction, I will not encumber the preface with a development of them. Suffice it to remark, that one great obstacle to the reception of any discovery, is the difficulty which men experience in at once parting with old notions which they have imbibed in early life, and which have become the stock of their understandings. Cogent must be the arguments which will induce a man to abandon at once his old opinions, and pretensions to knowledge and learning, and throw himself into the open field of investigation in search of truth. Hence mankind regard with suspicion every new discovery, and embrace it only when convinced of its importance and truth.

In reply to the enquiry, whether a horse gentled by my system will remain gentle? I answer, if a horse becomes gentle by kind treatment, he will remember your kindness towards him; and if he meets with harsh treatment, he will remember that also, and dislike all such masters. When the unkind master approaches him, he will fly from him, whilst on the other hand, he will approach the one who is accustomed to caress and treat him with kindness. And this is common with all domestic animals. Is it not reasonable to suppose,

that if an animal becomes obedient and docile by gentle methods of treatment, he will not only remain so, but also become more and more tractible under a continuance of the same treatment? It is common with all animals to avoid their enemies. Horses fear men; sheep, wolves, &c., and express attachment only to those whose kind treatment has secured their affection and confidence.

One special object in view in my system of instruction is, to introduce a humane plan of treatment, which will not only prove to be highly advantageous to the horse himself, by which his value will be enhanced, but an ample remuneration to his master. Whatever renders the animal more valuable, benefits the owner as a matter of course. Nature has given to the horse noble traits of character, which should be preserved and rendered subservient to the purposes of man, by an appropriate plan of management. This is fully appreciated by the Arab of the desert, whose habits and mode of life render his subsistence, safety, and successful enterprise, dependant upon the perfection of his trusty steed, which he values above price. Nothing deserves severer censure than the wanton brutality often practised in the treatment of that noble gift of the Creator to man—the Horse. A plan of management is adopted for the purpose of “*breaking him,*” as it is called, (and truly *a breaking it is*, for he is ruined by it) which renders him comparatively worthless and unsafe for many of the purposes for which he is used. Teach a horse in the right way, and he will soon learn what you wish him to do. Repeat your lessons, and they will soon become familiar to him, and with a little practice, he will perform what you desire—*thoroughly educated.*

The capabilities of the horse very far exceeds our conception, and they may be developed, by proper management, to an astonishing extent. To instruct others in this art, is proposed by the Author.

PRINCIPLES.

We are told by the poet, and it has almost resolved itself into an axiom, that

“The proper study of mankind is *man*.”

Without aiming to controvert this precept, I shall endeavor to prove in these pages, that the proper study of mankind extends much farther, and embraces not only the characteristics of the human family, but all things corporeal and incorporeal, and more especially of the whole animate creation. In the scale of being, man ranks first; but to him alone are not confined, sensation, perception, emotion, or passion. All of these principles of life are shared with him, by those animals which we are accustomed to look upon as destitute of mental attribute more than may pertain to what is denominated *interest*. It is not my purpose to enter into metaphysical speculation, but to draw upon facts as unfolded by experience and observation. In entering upon this task, prompted by what I consider duty to my fellow man, and to the long and watchful years I have devoted to the cultivation of an intimate knowledge of the organic structure, habits, inclinations, and diseases and their remedies, of the animal kingdom, I am aware of the embarrassments I must encounter in removing long established prejudices, and pioneering my way, as it were, through labyrinths and tangled forests of error, in clearing and making plain the avenue to the temple of Truth. As the philosophical Spurzheim sought to embody the immutable laws of the Creator, for the better treatment and government of man, so do I desire to extend the principle still further, and appeal, by pointing out their application to the laws of nature for the more tender and benevolent treatment and government of the lower order of animals.

We are, by education, made steadfast to our errors. Being “at the head of the terrestrial creation,” we look down upon all other animals as insensible to the impressions that move and direct and govern their actions. Because we do not understand and interpret their language, we consider them dumb, and look upon them as possessed only of the meanest instinct—of life, of hunger, of pain, of sexual feeling. By

allowing the principle, which it is my purpose to elucidate, we are compelled to invest them with intellectual faculties similarly enjoyed by man, and rendered more apparent in him, because improved by education and the most careful and assiduous cultivation.

Preface on Teaching Horses.

Before you commence the teaching of horses, and other beasts, you will seldom find a beast to teach all those principles or the half of them, by this kind of practice after learning him to work and to ride; many other things he will be readily and easily taught. I do not now remember to have had a horse or mule, that was very bad to ride and work both. But if he was very hard to ride, he will be willing to pull; and if hard to learn to pull, he was ready to ride, so you have now reason to dread a long routine of trouble, if you practice the proper plans.

First. Be kind to them in all things.

Second. Remember that order is God's first law—uniformity in all you do, and repeat it until the animal can understand your wishes. This will soon be done if you will convince his five senses in all things.

There is nothing hard to do, or required to remember than convinces the five senses. You will find a difference in them, that the bold and discreet, will be better adapted to many uses, than the timid and fearful. I hope you will not look for them all to be of one kind of mind, body, or color. I am aware that many men of that kind will take this plan, and by practice, teach or gear, or teach the rope to gear hitch in among gentle waggon horses or plow horses, when there is gentle ones to ride twelve a day with ease, and many I have taught to work single in plow, so you need not complain of the time. Some are so badly supplied with bridles, gear, and lines to use, that they will have horses spoiled for want of a dollar bridle or twenty cents worth of rope, or some other small fixing, never having any thing as a systematic farmer or business man's economy is what I recommend, but bad materials is not economy, or stinginess, is the saving a dollar to lose a one hundred dollar horse.

THE STALL.

The stall should be so placed and constructed, that you may go to the horse with convenience on both sides, and move around him; as the true principle is to convince his five senses that you will do him no hurt or injury. He will look and smell at you, listening for your tone of voice, and the manner in which you approach him. When you place your hand on him, it is necessary to do so, as quietly as possible. Do not let the hand move for one minute, at first. Then do not let it move more than three feet in a minute—the slower the better, for the great aim is to remove all fear and apprehension of danger, and give him evidence that you will not hurt or injure him. Always on approaching him, give him some food as an evidence of your kindness and friendly intention. If he has been on grass, offer him corn, then oats; if he has been fed on corn, give him oats, then grass, apples or what you may have, that horses usually eat. If he be dry, give him water from your hand. Holding the water to him produces a better effect than to lead him to it. The reason is obvious. All domestic beasts come to you for food, more especially when the snow covers the ground, or the lot has no grass or other food to satisfy hunger. Hunger and drought is the necessary of their nature, and consequently the governing law. Through these they are addressed, and readily learn to appreciate their friends. Combining the evidence of your kindness, given to their five senses, and looking to you to furnish the accustomed supply of food and water, they early begin to recognise and acknowledge your friendship, and show their appreciation, by following your directions with astonishing facility. You can easily accomplish all that can be done, or is to be acquired. It is by such means, animals are taught to open doors, or gates, pull down fences, untie halters, or slip their bridles. The hot sun or unhealthy skin that itches, urges him to wallow. All that he does is with the design to satisfy his wants or gratify his feelings. Little things are important to him. If the gnats or flies bite him, he resists, and shows his uneasiness by restiveness, and employs the means nature affords, to relieve himself from the annoyance. He obeys the great law of nature, and his success is equal to the conveniences with which he has been gifted.

The Horse Lot.

In the selection of lots for all kinds of animals, the slightly undulating or rolling are to be preferred, as the water from heavy rains are drawn off, without creating ugly pools, or soft marshy spots, or being washed into unsightly gullies. It is best to have them enclosed with post and railing, and so high as to prevent any attempt to leap over. The enclosure should be at least seven feet high, or more, for the horse is very exact in his measurement, as may be seen at any time when a loose animal is driven into a fence corner. He walks up to it with his breast, at a glance discerns whether it be practicable or not. The posts and rails should be large, for he can very readily determine the strength of the fence; and sometimes in an effort to break through, he not only injures himself very materially, but becomes frightened to a degree that leaves a bad impression for the future.

As before remarked, the ground should be as dry as possible, with water in the lot. The locality, if practicable, should be on the south side of a hill, to keep off the cold winds, and sandy, that they may wallow and clean off easily. The west winds as well as those from the south, are generally pleasant, which are to be preferred to any other exposure. I would have in the lot, all the shade that would be required for the number of animals. The form of the lot is best in the triangular shape, or Δ . If it be necessarily otherwise, a square, with four strings running to the centre, and extending to within ten yards of each other. The horses being thus hemmed up, are less inclined to run, and are to be caught with more facility. As a general rule to be observed, the less noise and more quiet in all things, the better. I have often seen children and men hallooing about their horse lots, the horses running, cows lowing and dogs barking; and yet these persons will tell you that they are gentle to their beasts. To all such I would say; fashion has a potent influence; then pattern after those that have gentle, fat, and sleek horses. I have seen persons with large numbers of animals, which they were feeding for the purpose of fattening; and when one was wanted, be compelled to drive them all up. The horses were afraid to enter the lot, but would run all over the field or pasture, before they would enter the gate or gap. And when once in it would run round and round, seeking some avenue of escape, until wearied down, covered with profuse perspira-

tion, and purging as if with disease. This will not fatten. Any one of common sense and the least reflection, must be aware that they will inflict more injury than days or even weeks will be able to remedy; and then, the lasting impressions on the memory may not be eradicated in a life-time.

To Tame a Horse that is perfectly wild.

Have him in a stable or paddock, and after clearing the premises of every thing calculated to frighten him, (dogs, chickens, &c.,) drive him as gentle as possible into a corner, and approach him by degrees, that he may see there is no cause of alarm. If too skittish to let you approach him, take a rod eight or ten feet long and rub him with it till somewhat gentle, and approach gradually by shortening the rod. If the horse shows fight and attempts to fly at you, as the wildest are apt to do, shaking a blanket in his face will effectually frighten him from his purpose. Ride a gentle horse by the side of a wilder one, and he will be safer, and the wilder one tamer. As soon as he will allow your hands on him, rub his face gently downwards, (not across or "against the grain" of the hair;) as he becomes reconciled to this, (as you will perceive by his eye and countenance,) rub his neck and back till you come to his tail, repeating the operation several times till he will permit you to handle his tail freely. You must rub him on both sides, as he may be gentle on one side and not on the other.

Stall to gentle the Horse in.

The stall for gentling the horse, is of four posts, set three feet apart, and eight feet long. The first slat one foot from the ground, leaving space to get your hand in, that you may rub the horse and gentle him before you let him out. The height of the stall should be seven or eight feet, that they may not try to get out. The bridle should be put on, and let him remain in the stall one day, and bad horses from three to five days, as the fear of the handler may require.

You may lead him out, calling to him in a soothing steady voice, and in about ten minutes he will follow you like a dog.

Exercise.

Exercise the young horse before you ride or work him, as this will prepare him to be more quiet to work or ride. This

should be done with all horses that have been idle for a length of time, as it might then be seen if they had acquired any bad tricks.

Put on a young horse the gag rein, sursingle, and croup or crupper, drive him round you gently, and he will soon be quiet; then rub him repeatedly over the whole body. As he runs round you, use a pole, a corn or hemp stalk would be preferable, so as to rub it over him without scaring or hurting him, but to make him sensible that things may touch without doing him injury or producing pain. By continuing this course, his apprehension will be removed. A similar course teaches the horse to stop against the shaft, or the sweep of a mill or cotton gin. He should not be exercised too much at one time; when fatigued, he should be rested; in the meantime, pet him and rub him all over, show him kindness by feeding him from your hand; the quantity of food given at one time should be small, in order to teach him to look for it. This method of procedure may appear slow and irksome; but in three days it will do more than all others combined.

After the young horse has been exercised one or two hours, he should rest eight hours, and in this way two lessons may be given each day. If you make him stiff and sore from over exercise, he becomes feverish, irritable, timid, and easily frightened, as is the case with man. His stall should be large and roomy, and he may be tied by passing a rope round his neck, or better a head-stall halter, to which a bit may be fastened at pleasure, that he may learn bridle easy. If his mouth becomes sore, he will turn away his head and refuse to be bridled; in this event, the bit should be wrapped with some soft substance such as leather, and the horse should be treated kindly until his mouth becomes well.

To teach a Horse to Harness.

Have first a bridle with blinds, and check rein and croup, in order to have entire control. Then have a long rope, say twenty or thirty feet in length, as large as a bale rope, or such as should be used to throw a horse. Lay this rope over the horse's neck, hanging along his side, so to drag after him. Take the reins quietly, near the bit, and rub him on the forehead and neck, talking kindly and in a gentle tone of voice. Then as slowly as possible lead him along. If he appears alarmed and manifests the slightest disposition to caper, stop him and rub him over the head and neck again, gently speaking

to him during the time. Start him again; and continue this process until he ceases to be restive and moves along quietly. You should allow the rope to slip off, occasionally, from his back, and re-adjust it. It should be allowed to drag first on the outside of his legs, then on the inside. This is necessary to accustom him to the traces, and prevent his kicking or becoming frightened, if he should get his legs over them. If he seems wild and skittish, the rope should be kept on his neck several days. The blinds should also be kept very close for the first hour or day, and sometimes three days or more, as it has much to do in keeping him quiet and subduing him.

Do not turn the horse loose at first with the rope dragging on the ground, lest it should cause him alarm. It will only be safe after he has drawn it along some time and become accustomed to such an appendage.

After practising this until he becomes familiar with the rope, proceed to gear him quietly and cautiously. The traces should not be permitted to swing about and strike him with the ends. Nor should the gear be too tight at first, as its moving about is calculated to produce alarm, which is to be avoided by all means.

When he is geared, put on the lines and drive him about until he will start readily and stop at command. When this is done, attach a long rope to the ends of the traces and gently pull them. When he is attached to a wagon, do this with a tried horse, which should start first, and have it in a place where you may turn easily to the right or left; and especially where the start may be made without the slightest impediment or obstruction. As he often may show an inclination to turn to the right or left, yield to his disposition, and in turn he will become accustomed to your direction, and yield to your guidance. The waggon should have a high tongue; and I prefer the yoke, that the tongue of the waggon may not strike him, nor as it winds, press on his hind leg and cause him to kick or lean upon it. The waggon should not have any thing to rattle, as he is easily alarmed and his apprehension is startled at the slightest noise.

Work Horse.

In all cases, you should be at the horse's head; and the one at the head, should in every instance, start and stop him, after gently rubbing his head and neck, and speaking to "come along" and he will follow. If he does not obey, rub him over again, and by turning to the right or left as the case may be.

and he will start. Keep close to his head, and watch for the slightest evidence or symptom of alarm; in which case stop him, and repeat the directions heretofore given. If he goes off quietly, stop him in ten yards. This is to be repeated three times in succession, after which he will appear more gentle and obedient. Still do not drive him out of a slow walk, that he may acquire a quiet, easy mode of moving in harness.

There should be an outside line to his bridle, that, if he should scare at any thing, you may apply your power with more readiness to check him. If he be hard mouthed, apply the draw-rein by letting the line go through the right ring, and fastening it to the left check. By this his head is pulled up, and the power is very great.

When hitched to the waggon, stroke his face gently and lead him forward. Keep him from going too far forward however, and rather repress him; as it is best to keep him well back at first till he has become accustomed to the motion of the gear and the resistance of the draft. Do not, in any event, fasten the rein so as to draw on the chin or jaw. It is calculated to confuse and perplex the animal. If he be attached to a plough, a sursingle should be used to prevent his reins from going too far forward. The reins in the head collar around the leader's neck should be properly adjusted, and the reins so fixed that he cannot back on the swingle tree. The off line in all cases to be used to keep him back, and it also serves to keep him to his place.

In teaching the horse to work, the more quietly it is done, the better. It is also requisite that he should learn to start slowly; and when more than one are driven, they will move off together. The efficacy and importance of this may be seen in the drawing of the mule and ox. Jerking and jumping against a load soon strains the horse, makes him sore and balky, and impresses him with erroneous perceptions that can never be wholly eradicated—or rather can only be removed by the most careful pains and constant assiduity.

The rules laid down here, are simple but effective. When all the old rules fail, as they must do in ninety-nine cases out of a hundred, those which are here asserted will prevail. The impressions of the old system of breaking a horse are now apparent. The errors it imposes, the wrongs it inflicts are sufficiently manifest. If the new mode I have laid down, has a few defects, it still has the advantage over the old, which was deficient *in toto*. Kindness has on more than one occasion, been more potent than blows, and in nothing is it more

remarkable than in the education of that noble and tractable animal, the horse.

The collar should fit close to the neck; as it is often the case that by the collar pressing on the outer part of the shoulder there is a tendency to impede the free circulation, which results in sweany and lameness. Sometimes the top of the harness is too wide, which causes a pressure on the point of the shoulder, taking off the hair and abrasing the skin. By refering to the plate it will be seen from an examination of the gearing, that the breeching does not go as low as commonly used. Often the back of the animal becomes sore. This may be remedied by ploughing with breeching or hip straps. With young horses, I recommend the use of this addition to the gear, as it prevents them from getting their feet out of the traces, or by having a piece of leather, raw hide or gum elastic extending from one trace to the other, in front of the stretches or swingle, so far up that when the horse stops the leather presses on the legs so that he cannot get his foot between it and the tree. This is easily applied, and is a sure prevention. You may use a strong piece of bagging and insert some splits, such as are put in lady's corsets or dresses, laced after the fashion of sacken bottom beds. In teaching animals to draw, it should be, that the lighter the load at first the better. I have, in my experience, found that the weight of the plough itself was quite enough, for one or two hours—nor should a greater weight be tried, until the horse has learned to move with freedom, or exhibits no restiveness whatever.

It cannot be too urgently impressed on the mind that instruction is the more easily imparted to the horse, by persuasion and kindness. Ill usage is never forgotten, and animals of the mildest disposition and the utmost tractableness may be irreparably injured by injudicious haste, by obstreperous language, or what is still worse, the infliction of blows. Like the dog, the horse likes to be caressed, and he repays all the good treatment of his master by a ready compliance with his will, and the most grateful and lasting attachment, obeying the slightest indication of his wish to go forward or pause, and evincing the liveliest expressions of satisfaction at his approach.

To teach a Horse to follow you.

You may cause any horse to follow you in one to ten minutes. First, tie his halter or bridle in his mouth and around

his neck or over the saddle, so as to keep his head up from the grass, and other objects that he may wish to eat or smell, some should be tighter than others, for some are too fast, and others too slow. Then take him from among the horses and people, to the most convenient place. Speak to him, rub him over the forehead above the eyes, and with the hair and over the neck and face below the eyes, not on the nose; as soon as you pass your hand over the head and face three times or more, you will find him attending to you, as it is often they will lean their head towards you.

The manner of going from and to him should be slow, and quiet—reach your hand out slow, and touch him on the shoulder, hip, or head, which he may be most willing you should do; for if his mouth, head, or any other part be sore, or has been sore, he will not turn towards, and in accordance with his mind, as I have said by the form of the head.

I have shown you the plan, and by little practice, all may be done that is necessary. The more you feed them and handle them, the more quiet are all creation. If you are not in the habit of handling them, do not lose hopes; wait and see others practice; and by thus seeing them do, and knowing how it is done, and what the animal is on the premises, you will come to correct conclusions. Seeing all the facts, you will soon know what is to be done.

The perfection is, first, the soil; second, the culture; rich soil like all things has produced more of late than former ages. Who could believe, the quality of materials and the mechanical skill has surpassed past ages. The perfection of the telegraph; the music of Jenny Lind, and the drum music of the Infant drummer, are proof of what can be done. If these musicians can charm the world with it, the mechanic can drive the boats with fire and water and represent the world of the terrestrial Globe, as Planatanarians do, surely you can play your part. To ride and work the horse, and use him for your comforts, by the law that pervades all creation. Try to get the plan clearly in your mind, and practice it until you can do it; as many others have done. By so doing, reap many advantages of the useful animal.

And if there be nothing to attract his attention, more than yourself, you may then say to him, come along! come along! repeating the tone to suit his spirit. If dull, loud. If spirited, low and quiet; the more constant and regular, the better; be careful not to walk faster than suits the horse; not to get more than three to ten feet from him, or you will soon lose attention, and he will then look to other objects.

If there be any bruise or sore on the face, be careful not to touch that; or if there be any place he refuses to let you touch, do not force it, but try if he will be taught to allow you to handle it quietly, by laying your hand on it slowly and quietly, and repeat until he is convinced that he will not be hurt. To teach him not to run from you after quieting him, let him stand, and you go from and to him some three times.

To teach a Horse to lay down.

I have found this principle of much importance. First is, that the efforts and struggles made to relieve himself, subdues his ambition, and in safety to handle him all over, without danger to you or horse, yet in all things be quiet and slow at first; after handling him all over the body and limbs, have him to get up and repeat it three times, by this time you will find him much more submissive. In all cases where he first lies down you will find him inclined to lie there again, this you should do for the three first times; then if you wish him well trained to lie down, take him to another place and continue to do so until you can have him to lie down where you may desire. It is the case where the horse is to be shod or that he has a sore or wound on the foot, how by this means you may manage it. If you wish to alter a horse, or that you may want to put a pack on his back or a deer you killed, or you wish to carry him on a steamboat or ship, and standing a long time often injures him, by this many of those advantages are gained. It is then easy to make use of him as life-guard whilst you sleep. When he is lying down go to his back and place your head on his cheek, he will take the alarm from smelling or hearing the enemy before seeing them, by raising his neck from your head, jars you and awakens you, then you will always find him looking in the direction of the enemy. If it be dark mount him, let him take his own course, and he will escape from them. If you were out in the wilderness where means could not be had, you might get grass or leaves, let him lie on the grass and you on him.

The bridle with bare bit not to work in the centre, for it draws the the mouth in. You see, the drawing of the bridle reins, sirsingle, and crupper is important, to learn him to obey. The bridle to turn to the right or left, or to stand still in putting on sirsingle, you should give it light at first, then pull it a little for three or four times that he may not get scared at it. In putting on crupper you should rub his

tail down until quiet, pulling it gently, raising it up and putting it down, until he will allow you to put it on his back, then put the crupper on, holding to the tail, raising it up and down until quiet, then make it tighter.

All you have to learn him is to submit to the bit; do not rein him tight, but enough to let him stretch his neck against it until he learns to submit; after an hour or more raise it a little tighter until he learns its use.

If he be vicious you may rein him very tight for a short time, but be careful not to keep it tight too long, for he will faint and fall, and in struggling may throw himself back and kill himself. In vicious horses you may punish them for a short time by tight reining of them, until they are tired. When this is done loosen them, and rub and pet them, this will subdue their viciousness and make them more fond of you; then he is in condition to take to the stable, as that is the proper place to commence in all instances. The more vicious they are, the more important that they should be in the stable, as they would not jump in the stable (it is seldom they jump in a stable) when they would out of it. They should be kept in the stable and used for one hour or more. The above plan for teaching them to lay down is important for working horses; I recommend that they should be worked first, as there is less danger to man and horse.

To teach a horse to lie down, commence on the near fore leg by rubbing his leg quietly, and taking up the foot three times or more and putting it down gently and rubbing it; you may put a loop on it, the loop should be made short enough to turn the foot up, so as not to strike the other leg, then tie a string across the loop to prevent it slipping off; then if he is not learnt to lead he may pull back and lie down, if he has, put on him a sirsingle as I describe in drawing. Let it be tight around the girth or heart, and fasten it on the back, so that when he lies down you may loosen it; and let him lay for a while, rub him all over, be as quiet as possible. If he gets up, repeat it until he will lie as long as you want him. If he is not inclined to obey this, have a pair of lines so long that you may let the right rein come under his belly, then you will stand off from him five or ten feet that he will not fear you, then as you turn his head to the right in places the centre of his weight on the left shoulder, that causes him to kneel down; and after kneeling down he will on the first time lay down—sometimes will rise up three or four times. If the sirsingle is very tight he will lay down the sooner. If he attempts to rise up as often as he may like, by this means

he will soon learn your wishes, and you may soon take the foot in your hand and he will gently lie down. You will find the deeper the sand or the looser the ground, or what makes the bed soft the easier he will be to learn. You will find that they are not so willing to lie on wet ground as on that which is dry. If the ground is very hot they will not be so willing to lay there.

To train a Horse for the Saddle.

After putting on the saddle, placing him in the stall, and going through the process of rubbing him over the head, then body and legs some three times, you may put on the blind-bridle, sirsingle, and crupper; then rub him again all over. This manner of doing is the fastest and best manner of quieting them. They can only be gentle as they become familiar with their handler. This is true, for they will become quieter to the person that handles them than to any other. It is often difficult to have horses or any other beasts to obey all persons alike. Horses often seem quiet to a white man and not to a negro or Indian, and he may be kind to negro or Indian and not to a white man; and often quiet to lady or child and not to a gentleman. It is true, circumstances alter cases with all the beasts. This is evidence to you that he reasons, and you should treat him accordingly. This is true of many grades of all creation. Timid, sullen, and fighting animals, quietness and persuasion will bring about control of them to usefulness. You now have gentled him to be familiar with you, rub, pat, and handle his head, legs, and tail. When you have given him plenty of exercise by driving him around at the length of the leading reins, then you should learn him to be led by the side of another horse; and when you get him trained to ride, at first you should lead him a while that he may learn to go; then let him follow after the gentle horse. Before you mount him take him in a stable or pen, the pen to be seven feet or more in height, that he will not attempt to get out.

To teach a Horse to stand whilst you Mount him.

Take him to the stable, and if he be bad, tie him to his stall and commence by first rubbing him over the face and talking kindly to him; then get close to his side that you may look between his ears, rub him, and when you get him to stand quietly, mount in the saddle, sit quietly on him, rub him and

after sitting on him one minute when he stands still quietly, dismount, and do not until he is still. Repeat this ten or fifteen minutes in the stable, he will remember it; then take him out and repeat it until he understands you. A draw-rein or curb-bridle will be best to train him with, as he will be easily held. The saddle should be tightly fastened on; in all cases the martingale is useful.

If you wish him to come up to a block to get on him, lead him up to it, used as you have learnt him to stand; after getting him there, rub him, then quietly get on the block and mount him. This should be repeated, then lead him away then back until quiet, then to another place, and you will soon have no more trouble with him; but if you should have him to come up and then at some other time get on him, and as soon as on him whip or spur him, and repeat it, you will soon find him restless, or any one in your absence, or some boy to ride him to water. You find a lady's horse or an old gentleman's horse act according to the manner they are treated. Use is nature and habit is its nurse. If you are not systematic in your plans how can you expect the horse be.

To make a Horse used to Steam Engines.

All horses in the fields near the rail road soon learns to know that the cars will not hurt them, and often they will not move for its puffs or whistle. So you will remember he will soon learn if you will give him a fair opportunity to do so; this you will do by leading him to the car, and do not be in too much haste to get him near to it, but lead him around it. It may be necessary to lead him around it three times, and speaking to him and rubbing him as above described; at first lead him away from it and then back several times, and when it leaves follow after it for half a mile. By repeating this some three or four times he will be more gentle. You may find a difference at first, if the color of the cars is changed or has on them live stock of any kind, or any hides that smell.

To break a Horse of Shying or Dodging.

Never strike him for an offence of this kind. But when he scares let him stand. Speak to him and rub him on the neck. If not too much alarmed let him go around it, do not kick or torment him, but encourage him by talking to him. If this will not do, when he scares stop him, for it is natural

for them to stop at the approach of danger, except at falling of trees, get off, rub him in the face and talk to him—lead him up to the object of alarm, then away and back until he will come up to it quietly; this repeated successfully some three days or less, you will find him obedient to you. The young beasts are more timid than children at the age of seven or more, the mind partakes of the fullness of the body; thus you see the age in which horses show their knowledge of opening gates, bars, and pulling down fences.

To prevent Horses from scaring at Bridges.

At first lead them across some three times, back and forward, until quiet, repeating this at several bridges you establish the habit; be sure not to hurry over bridges as it will excite their fears; let them follow when in company—all beasts have their leaders, and aged animals have strong command, which the weak obey—patience is the best teacher.—This evidence teaches more of those senses. Hence the old horse jumps the fence or ditch, and the young horse follows him; he leads the young into the field. The old often fills himself and goes out and as far as from the place as possible for fear of censure—the young is punished for the crime.

To make a Horse stand where you leave him.

First, tie a knot in the reins of your bridle, making the near rein shorter, so as to draw his head one fourth of a circle, and tight enough to rein him so that if he moves he may be compelled to turn around; the saddle may require a crupper to prevent his pulling it forward. If you have no saddle, tie it to his tail. Another plan is, to have a wide cloth fastened to the head-stall of the bridle, and wide enough when loose, to cover over his eyes. By doing this many horses will in a short time learn to stay where you leave them. It is necessary to turn him from the course he may want to go. It is not certain that you will know how tight the reins should be until you try them; if too tight it will cause them to go around too fast, and throw and injure them, or cause them to faint and fall. If no one is there they may die for want of circulation of blood. You must have some judgment of your own, or I cannot point out the case to suit all. If I learn you the rules and principles you must work out the sum. If the horse is of the docile and kind species, practice this some three or four times, and if he appears quiet you

may let him loose to eat grass, or you may learn him by the use of the drag rope ; after learning him the use of it, you may have a short pin and drive in the ground, then you may learn him by throwing the rope down. If you are kind to him, and he is of the kind I describe, it is easy to teach him all that makes him useful. Go to work in good faith and obey the laws and truth.

To accustom a Horse to an Umbrella.

In teaching him to approach an umbrella, let the umbrella be folded at first, and then draw rein or curb that you may hold him—this is to be done on foot, as he is easily learned and held.

You should have a stable high enough to set on him, then commence by first letting him smell it, then pass it quietly over his face and neck, then put it against his face, rattle it on his neck, then raise it, by putting it against his face, raise it over his head as high as possible, then shut it ; repeat the process, then let the cotton pass against his face, and he will not be fearful when it touches him.

To accustom a Horse to a Gun.

Commence showing your friendship by carressing as above detailed ; then snap percussion caps with a pistol, and let the horse smell the smoke of gunpowder. At every explosion, caress your horse till all fright is removed, then you may fire small reports over head, around and behind the horse until all is quiet. After firing three or four times he will not jump ; you may then mount and fire ; the danger is over. As soon as you convince the horse that the explosion will not hurt him, you may fire a cannon and he will not budge.

To manage a contrary Race Horse.

If he stops or sulks when leading him, speak kindly to him and rub him down the face, using the bridle no more than you can help. Turn his head gently to the right or to the left ; turn around, and you will never have to turn his head in this way more than three times, before the sulkiness will disappear and he will be willing to start. Continue rubbing him in the face, talking to him as in other cases, and keeping him quiet by leading him about, using the same soothing tone of voice, till the time of starting. Make him stand in one spot

by rubbing him in his face. If he frets, lead him away, and then back to the same spot, until he remains quiet at that spot. Some three or four times will do. If you have a race horse which flies the track, you may break him of it by blinding the eye on the side he flies, and practicing for some time; as soon as you put the blinds on, he will instantly go to the track, or you may run him occasionally the contrary way around the track, from the way he is accustomed to run.—Some horses run unkindly under the spur. Most race horses are whipped too much. If you whip, strike different parts of the body. Many need only the encouragement of the voice, and if trained to obey it, it answers all purposes.

To teach a Horse to Pace.

First, select a horse with a good tread, that reaches well, so as to pass the hind foot over the track of the forefoot; long bodied horses such as mules reach well. Two or more days walk with the weight of a three pound shoe on each hind foot will give him a gentle pace; level and dry ground is the best; take care not to let them loose with such shoes on.—You are certain of success by having a strap three inches wide, and long enough to reach around each leg, before and behind, below the knee and hock, with holes punched in it, and tying them tight at the distance they naturally stand, and lead them gently and slow, so as to get the proper motion, as the slower he learns the motion the better he will pace; after you have got him well in motion, then increase his speed by lengthening the strap and gently pushing him along steady, and press on the bit that you may prevent him from a change of motion.

To travel Horses by Steam or Sail.

When you first go to the vessel do not hasten him up to it, wait to let him see there is no cause of alarm, lead him from and to it, talking kindly to him, rub him in the face as gentle as possible, lead him on the boat or ship as the steam begins to puff, then go to him, talk to him, rub him over, and the alarm will soon wear off; offer him some food from your hand; by this he will do well; he may get so badly scared that he will hardly drink or eat for five or ten days; after your arrival at the end of your journey be cautious of their taking too much exercise, best to put them in a small lot, there to remain twenty-four or forty-eight hours. If rode ten or

twenty miles after standing, without such caution, they become stiff, and often founder badly; sometimes never get well. I have seen good horses ruined by a ride of fifteen miles, some less, and some from a run or play of a mile.— You should always be cautious of such cases; for horses from the stable that have been standing for some time without exercise, often ruin themselves, or cause colic or founder.

On all vessels, to prevent the jar and shaking, the stall or platform on which he stands, should have two springs under it, fore and aft, to prevent him bracing his legs from one side to the other, and would permit them to sleep with less excitement, for it is often the excitement which weakens the appetite and sickens the horse.

Kicking Horses.

The first thing, is to take him to deep sand or deep loose ploughed land, then gear him after the manner you design to work him. Then put a large rope thirty feet long over his neck; let it hang by his side, rubbing his sides and legs; put on him the bit, gag-reins and crupper, that he may not struggle and kick; then lead him about, that he may kick until worried and sore; let him rest when he is worried, that he may feel the soreness, and continue and he will learn better the folly of so doing in one hour; others in a day. If there is sores anywhere about his legs or the hair is off; or otherwise, let him alone until all is well. This is like the true pulling horse that has strained himself, jerking until sore, then will not pull an empty buggy. I have managed them, and they would scringe and lean back like they would set down.

The truth is, that all creation is on the change, and I remember many cases that I have seen where the animal was well broken by experience. I have seen them with brush to the tail-boards, and they were so completely broken, that you, if you could but drive them slow, they would go slow to prevent the legs from bruises; and I have often seen them stoop behind, to keep the legs from the blows, yet not kick. I know of a case where a man let the horse loose—let him run with the swingle-tree, kicking it and tireing his legs, until he was perfectly given out, and such is the best broken of all. I have never saw one attempt to kick afterwards. I remember a case I broke, that my relative kept for fifteen years or more; I always fear of her for her safety. You may prevent them from kicking by a cirsingle tight around the loins.

The memory of the animal is good, and such severe lessons would never be forgotten by them.

I would advise that care is taken to prevent them from injuring themselves—be cautious of their getting loose and running, and in their fright, running against a tree or fence and injuring themselves. When loose and blind bridle on, it often happens that they fall down. They are like persons, some can be scared into better senses, while others can be scared out of all they know; but if you, in learning the horse, practice the plan I have explained, I have yet to see the one that has got the habit of kicking.

The Field of Battle.

You find it recorded in the book of Job, chapter 39, verse 18,—“Hast thou given the horse strength? Hast thou covered his neck with thunder? Canst thou make him afraid as a grasshopper. The glory of his nostrils is terrible. He paweth in the valley, and rejoiceth in his strength. He goeth on to meet the armed men. He mocketh at fear and is not affrighted. Neither turneth he back from the sword. The quiver and the glittering spear and shield rattleth against him. He swalloweth the ground with fierceness and rage. Neither believeth he but that it is the sound of the trumpet. He saith among the trumpets, ha, ha! and he smelleth the battle afar off, the thunder of the cannons, and the shouting.”

The eulogies on the horse here, expresses that he is not cowardly, but he has confidence in himself; he looks on the cowardly with contempt, rejoices in his own power, his will he is determined to accomplish, for he will not submit; when he beholds the sword, he discerns the danger, and expresses his fierceness and rage. The false pretenders he will not believe. He sanctions the right and condemns the wrong. Here is decision of character combined. Decision of character is cautiousness—cautiousness of his rights and firmness to defend them. The prime ruling faculties in all principles is, investigation; without this, the judgment is defective. The wild horses on the prairie are always found arranged in military order, with their sentinels and signals to warn the army, and in one minute the whole company is ready for the contest—the colts in the rear and the mothers in front of the colts, and the line of sires before them, and the general in front at twenty feet or more, and at his sign or command, they all go forward in the fight, and if he commands the retreat, he is in the rear of all, protecting the weak at all hazards.

It is their law to have rear guards to protect the young, or the lame and the old. So you will find it easy to teach them the natural law of their mind. In training the horse to fight for you or to fight in the army, you must dress the persons to fight them in a dress similar to the enemy, as it will aid them to distinguish the enemy, for if the horses are tormented by persons with a colored, black, or Indian dress the spite is there, so you may learn them by disguise, by painting the face to suit the case.

On Dray or Cart Horses.

This is to show the practice of the grades that the various roads show. The strength of one to four as Macadamized, is 33 to 124. If one horse can haul the load two miles per hour, it is hard for two to haul it four miles per hour, and you cannot continue the rule up to ten miles per hour, for it is hard for many to go that without burden. But small numbers can go four miles in twelve minutes. If the best graded or plank road, a horse can haul two ton at the rate of two miles per hour, then you will say that two horses can draw it four miles per hour. This rule is not safe to horses, if it was, it would say that eight horses could draw it sixteen; that would be five hundred pounds to the horse. I would not recommend any to try such a practice, as the poor beast would suffer by such vanity.

If you will use two wheeled carriages, use the swingle-tree, and as little weight on the back, and have the shafts wide apart at the hip—four feet, that he may turn as easily as possible. The shafts should be just above the points of the shoulder, and so long as to strike the hames and collar—not the horse's side, and two feet room behind to back out: and in going in ditches and washes, good gear is important for good horses, as the guage to scribe the width of the plank, or compass to form a correct circle. Rule and principle is to be observed by all that would succeed well. I will recommend the four wheeled drays that are used in Georgia and South Carolina; the wheels are low, they will turn under the body, and the horses work side by side with neck yoke, to prevent the tongue from striking them, which should be used in all tongues. I would prefer a two-wheeled dray rather than the shafts. It would be but little trouble to keep the weight forward.

To manage a Horse who Sulks in Harness.

First, is to learn the various causes that may confuse him: that the breeching is not too low on the thighs, or that the head stall is not to draw up his mouth so that his mouth is not sore, or the bridle is not too severe, so as to hurt him. If so, rope the bit, that he may hold it in his teeth, and if the rings in the harness are not so as to pull him back more than around, as it is more commonly so. If so, take it out of the rings of the harness, and the rings of the saddle may hold it up. If you find him not suited, then let them come to his side as plow lines; by this you may lead him to go along; you will often find it necessary to go to his head, speak to him, rub him in the face, turning him to the right and left, until you find the way he is most inclined to go, and in a little time he will go your way. If you work him to wheels, the cart or gig is best, that you may turn him shortly around; practice this, and do not whip him, and you will soon overcome him; some by taking off the blinds, will obey; with others it may be necessary to stop their ears with cotton, and with it often to stop the sound; with others, hitch a pair of horses or oxen to the hind part of the cart, and pull him back, and repeat this until you give him the word, and he will not do so any more. Another plan is, to put him to light burden, and place him with his head to the food or stable; let him stand and get thirsty and hungry, and at meal time try him, and continue until he is willing to go; then, from your hand, give him apple, bread, or what he will eat.

We have stated that Oils Rhodium, Annis, and Cinnamon in equal proportions, put into the nose of the horse, some ten minutes before you hitch him to a wagon, is very certain to remove the sullenness. You may do as well with the chestnut of one of the legs of another horse, pulverized and blown into the nose—this is easily obtained. The same may be used with a wicked and wild horse at first handling. I have given above, the direction how to use it.

You will manage the sullen horse by stopping his ears with cotton, and wet it to be tight. Another plan is to hitch to hind part of a wagon, and make the others pull him back slowly; some you will pull back faster, until they are willing to pull when commanded. If you hitch them in this way, the breeching and belly-band is all important to keep the gear right. Many of them are so badly geared or driven that they are confused. In all cases the manager is in fault, for horses do

not do anything without a cause. In their natural field they act in accordance with the law of mind. To go forward; no horse has much spirit until the habit is beat into him. Therefore, if you balk the horse, do not spoil his disposition by abuse, it is ignorance to spoil him, and worse to abuse him, for your want of knowledge of the business; tight reins, or collar too loose or tight, will gall his neck, or if he is so blinded by the blinds that he cannot well see the way, it will tend to cow them, it is often useful to such horses as are vicious and hard to hold.

If your horse is inclined to run away with you, apply the draw reins and blind-fold him, but any ordinary woman or boy can hold any horse with draw-reins.

For sullen and stubborn horses, take a rope three times his length—tie it to his tail between his legs, and by suddenly pulling it, he will move off rather alarmed; try this but do not abuse them.

To introduce the Man to the Horse.

To teach a horse to be kind to others when you have hold of him, you must let them come and speak to him, and rub him; you should have care to repeat the rubbing of him, and to give him some food to eat, but continue your friendship until he shows to you quietness; in some it is but little odds who controls them; in others it will be hard to teach them to obey the white man, while they are kind to ladies, children, negro, or Indian; and if the person wishes to be successful with the horse, the more his dress is like the owner's the better, but be careful of any red or peculiar color, for red is what they resist.

PLANS ON PLANS FOR TEACHING HORSES.

Several Plans and other Methods of Gentling Horses and Mules.

I will place the best first, and so on, until through them. If you apply the several plans and practices, the system of communicating or addressing the five senses, you will do some good, and not be apt to do any harm. To the two first plans: you may have a gentle pet colt, but must learn to ride or work it. The kind boy has as much trouble to learn to work as

the bad boy. The mere fact that the boy is kind, will not prove that he is a mechanic, or a philosopher, or statesman; or that the sheep is more teachable than the vicious dog, or the quiet horse who learns to open the stable door or gate. The vicious grades, qualities, and dispositions do exist throughout man and beast, and all creation, and in all grades of aptitude. Men have their favorites in business, horse his choice of all kinds of work, or to ride, in gates, walk, pace, or trot.

To Gentle a horse, mule, or cow.

Take the oil of Rhodium, oil of Annis, oil of Cinnamon, three equal parts, and mix them together, and let them smell it by putting it on your fingers end, and rub it on or in the nose, and in ten or twenty minutes, they are then ready to receive your kindness, and your plan of teaching as above described. It has an astonishing effect on the animals of the world. I have managed dogs in a wonderful manner by it. It soothes the wild and timid. With the cow I have never failed to do all that may be required, when first in Texas, on the Brazos, I managed vicious cows, that would run at the horse, by getting her in a lot and throwing over her the rope, and tying her to a tree or post, and in fifteen minutes I rubbed her all over, milked her, took off the rope, and she remained quiet. When I went back a year after, her owner said to me that he never had any more trouble with her, and he had succeeded well with others.

Receipt for Taming horses.

We have stated that by feeding the horse from your hand it will make him in a short time as fond of you as your dog is. If he has no other food but that which he gets from you, but the more food will suit him, and learn him your will. I find you will have to learn him to the bridle, and all other practices to make him suit your purpose. It is common, as I have said, that many horses have been easily controlled that were bad disposed, The fact that he was hard to ride, and it so happened that he was worked first, and he was inclined to work, that caused the management to be easy, and reverse to that in riding. So if you find him wild to one, immediately commence the other, and this will, in three or six days supercede the danger of the animal from injuring himself or you; and it is advisable to bear in mind, that in all cases,

that you have seen, where the dam or sire has been hard to work or ride, the colts have often partaken of the habits of them; get their confidence and you will succeed better in one hour than you would in a week. I repeat those things as they are of so much importance.

Sicken horses with Tobacco.

This can be done (and will subdue his vicious disposition,) by washing him with the decoction of strong tobacco. One quart will make the nervous horse very sick, others of a bilious temperament, a gallon. If the weather is warm and he is exercised, it may kill him, if you do not have more than a common acquaintance with the temperaments, his size, age, and weather, be sure not to use it. The plan laid down will serve all if well used.

Receipt for Taming Horses.

One pound of oat meal, a quarter of a pound of honey, and half a pound of laurence, made into a cake and baked; put the cake into your bosom and keep it there until it sweats, and when the horse has fasted twelve or twenty-four hours, give it to him to eat, then use him kind and gentle.

Another cruel and hard case is the whip, yet all those whims have had their friends and admirers, who praise them as something of much usefulness and worthy of praise. The whipping plan will soon learn the horse to follow, but will not teach him to work or ride, but will often cause him to be hard to catch in the field. The plan of whipping the horse on the hind legs as he runs around in the stable, after worrying and cowing him, go to him and rub and pet him. If he does not stand, repeat the whipping and petting, until he will follow, but do not strike him in the face or on the fore legs, they are imperfect.

The second best plan is the use of the chestnut or scurf from the leg of another animal; it is found on the inside of the fore leg, above the knee, and on the hind one adjoining to the hock. By drying it and pulverizing it, and putting it in a goosequill that will hold a dose for each nostril, it tends to sicken or stupify them. You then must adopt the system of teaching him by the plan laid down.

3d. Plan. The Spanish manner is to milk the mare and mix salt in it, and give it to them from your hand to lick, same three or four times a day. In three days they become

fond of you. Adopt this for a while by feeding the hungry, and it will manage more than force.

All those principles can be applied to other animals, so far as they should be taught. Bear it in mind, that you have to hold back some and encourage others, but practice will accomplish all you can anticipate.

How the Stable should be made.

The length should be to suit each horse, with eight feet in the clear, with box for food, and eight feet to turn in, that he may have above stall a width of ten feet passage, that the air may be plenty in the warm seasons. Iron rods for all stalls—the rods of a quarter of an inch will do, the height should be seven feet, to prevent them from biting each other, and then they will allow the current of air to pass through. The windows should be two feet wide and two high, and three feet from the floor, with iron rods through them to prevent the horse from jumping through them. Shutters should be adopted in winter to prevent the rain or snow from beating in. The height of the second floor should be ten feet, with sky-lights the length of the stable for light, and to let off the scent that may arise. If the stable is not clean, do not put the food into it, as the scent will spoil it.

I would recommend that the shutters for the doors for summer be frame work; wood, with iron rods for slats, to allow the air to come freely through the house; the suffering from the heat will take away the appetite, cause them to feed irregularly, and by so doing cause them to eat too much, and give them the colic. For this reason it is better to be too cold than too warm. It is far better for horses to feed in the open air in warm weather than in stables, if he is shaded by roof or trees to shelter him from the sun. Some shady ground or plowed lots for them to wallow on so as to dry themselves, for the sweat and dirty feeling prevents them from eating. If the weather is not cold, pour water or that which has been in the sun for some time to get warm, it will suit to wash them in rivers or small streams, or by pouring on with the bucket, is best in cleaning, and helps to free them from fever, as all horses and mules have by laborious motion, and excited fevers. This should be done after feeding.

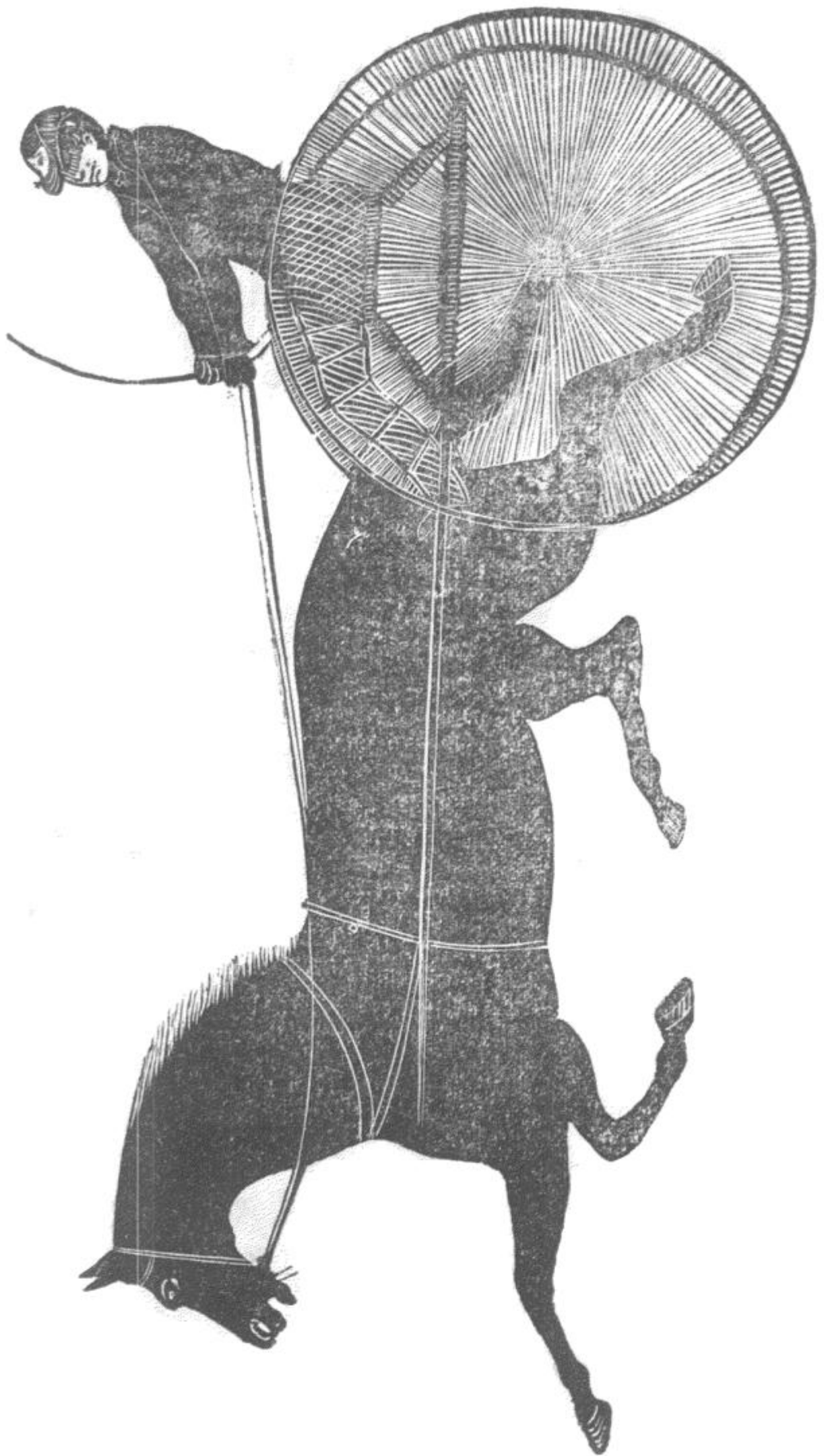
The stable is best when it is high enough to clear the head of the rider, and it should be close that he may not see out—that his attention may be to you, and the animal has been well run around you until disposed to stand, and has been learned to lie down, and is disposed to submit, have the saddle fastened on tight and strong, then place yourself close by

his side, standing in a manner that you can look between his ears, and in that manner you will easily and quickly rise in the saddle. Before raising, rub him over the head and neck, speaking quietly to him, then mount him; do not mount until he stands—try to have him stand when you mount and dismount; do not have him move if you can keep him still. In the first corner get up three times—then three times to each corner of the stable; lead him to the corners.

This should be done with all horses once around, and as much oftener as you please. By so doing, and riding them around the stable three or more times—to the right, then to the left—and practicing them in this manner, until quiet, which you can do in one hour, I have the first to rear or cut up, then practice this out of the lot. I would prefer loose or wet ground, or in deep snow, that is six or more inches deep. For this reason persons succeed well in working horses to sleighs. In such conditions they fear to fall themselves. Always talk to them, you will not say too much, but often too little, as it keeps their attention from other things and to you. If the fright is great, speak louder and faster—keep the head towards the alarm. Teach them all things, and then ride them.

In riding all young beasts lead them to the side of another horse, so that they will scare less, and will soon learn to follow. The best time to learn a horse to walk, is when young and it is most important to stick to a trot without breaking up. If you are fearful of his throwing you over his head, you may prop it by a fork under his chin, and a collar of rope around his neck to hold the lower end, not to go down to the legs; thus you may prop his head as high as you please and prevent all pitching over the head. This will, if the head is high, make his steps short and slow. To confine the three first day's work to walk, is all proper, and will do more to gentle them than any excitement will do, as it tends to make them scarey.

Never strike them for scareing, for it is sure to make them more scarey; they are inclined to stop when they scare or shy around. Thus it is best to adopt their law until you can adopt them to know yours by patience; in ten or twenty days you can have kind and obedient horses. This is more than you can train the child to do in the same length of time. By patience you are well paid, and acting in accordance with the law of mind and matters, to act otherwise is showing the want of reflection and of the mercy we owe to the dumb beast of our comforts. Will you not be just to the servant of your many blessings? Will you have them to mourn and cry for mercy when they only require, for all their toil and suffering here, the mere food and water.

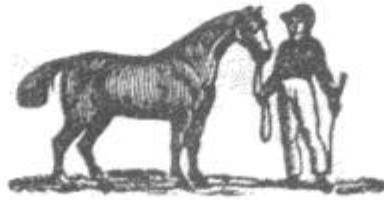


LANGUAGE OF THE HORSE.

The language of the horse is proven to all well-observing gentlemen ; yet their signs are so simple as never to mistake each other. His language is so easily learned, so far as we are concerned, and we need it daily for the purpose of knowing the designs of the horse, that we may tell him not to jump or run off. There are many lives lost that might be saved ; such was the fate of one of the gallant officers in the late battles of our country, whose life might have been saved had he, when young, given five dollars, and devoted one day's time to acquire a knowledge of the signs conveyed by the motions of the horse, instead of his entire devotion to Latin and Greek, a knowledge of which it took him, no doubt, years to acquire.

It is necessary to learn in this particular manner, because his eyes, nose, ears and feet, are the means of obtaining evidence to examine the various things of this life, upon which he makes up his opinion, and if he has it in his power, he carries out his design ; if he is overpowered, he will stand like a soldier and not move. If badly treated, and once gets loose, he endeavors to keep so, and makes the most powerful efforts to remain free. God has blessed him with those faculties for self-possession ; his eyes are better at night than man's, his ears comprehend sound, his nose enables him to smell his enemy at a distance of a mile ; so if any are lying hidden he is able to smell him, and for this reason all wild animals run with the wind in their noses, which enables them to smell their hidden enemy.

The smell of the man is so often changed by eating and drinking that it often alarms one of those five senses of which he knows it is all important to keep him quiet ; this is not the case with the horse. God has blessed him with the sense of examining for himself, and with this sense he uses the mind to consider all the particulars ; he prefers his own senses to any other ; he has a natural desire to look and examine for himself ; if he neglects noticing one thing he might neglect it in eating and swallowing poison, or let some wild beast pounce upon him and devour him.



DIALOGUE BETWEEN MAN AND HORSE.

Man—"I wish to put my hands on your face and come near you."

Horse—"If so, you must let me see that you will not hurt me, nor will have anything about you that will, nor anything that smells badly. I am a stranger to you; all that will offend any of the five senses I will be compelled to guard against, and those senses must have the proof that you will not hurt me before I will allow them to be on me."

Man—I "wish to put my hand all over you?"

Horse—"This you may do by commencing at the face. Commence rubbing on the face and repeat it, then pass on down the neck, first as slight as possible, and as I become used to it rub the harder. Remember always to rub the way the hair lies smooth. My tail is, that when I play, hold up high; as pride and beauty, you must be careful to handle it; but after you raise it, repeat it; raise it, put it down several times until it goes up quietly; it becomes habituated by use."

Man—"Then the more I rub you, and repeat it, the quieter you get?"

Horse—"It is so in all beasts."

Man—"I wish to show you a pretty blanket to learn you to let the man's coat or lady's dress hang down by your side, and in winter to keep you warm?"

Horse—"You have shown me that you would feed me, and other new things have not hurt me; I will let you use the blanket about my face as soon as I can see and smell it, then

feel and hear the rattle, I will better understand it. If you change it for one of another color I want to look at it and examine its quality."

Man—"I will then spread it quietly over you, and repeat it, then let it hang down at the tail, let it fall off at the heels and sides for a while, then I will fasten it to the tail; this will use you to the things falling off of your saddle or person, that you will not scare or kick them.

Will you let me hang a rope over you, about the creases of the neck, so as to let it drag along to your legs, and then over the back to hang against the hips, and as you turn to rub the hocks; then to put on the gear, and fasten a rope to the ends of it to let you become used to them, and put lines on your back?"

Horse—"Yes sir, you will do it quietly, not have the rope too hard or rough, to make me think it is a snake biting, or thorns sticking in me. If you put on the gear and lines, there are so many things about me at one time, I want you to put me by the side of my old acquaintance Ball, for I have often seen him in the wagon, and the side that is against him I am not fearful of being hurt, and where he goes I will go. Young horses are fond of following their old friends, but you must remember not to have me encumbered by a lot of gear, and then —— or to have things knocking and jerking about."

Man—"How shall you be startled, if you will go before I will follow; I want to feel my way five steps at first, or less than that; if alarmed, then let me know if anything is wrong by rubbing me over the face and neck, then after starting and stopping some three or four times you will understand that?"

Horse—"If you fasten me to such things and rush me off, and commence fighting me, I will then commence rearing and jerking to get loose, and free from such abuse; remember that confidence lost is hard to restore. Remember that all have to learn, and practice is important in exercise.

Man—"Your practice of the use of the bridle, and friendly acquaintance with me, will you not allow me to ride you?"

Horse—"Yes, if you will show me you will not hurt me. This is done by your rubbing me over the face, neck, and body, then get close along by my side and rising quietly in the stirrup, then down in the same place until I can know your will. Now, I am inclined to go with Ball round the fields to learn how to walk and to turn to the right and left;

there are cases that we learn to turn but one way, sometimes from sore mouth, other times from the tongue of the wagon striking against them, other times from alarm of gear, others from whips so as to pull more than I know how ; consequently I look for the whip and begin jumping up in confusion."

Man—"How shall we learn you better than by taking level pieces of ground, the wagon can be easily drawn slowly and quietly, and repeatedly practiced until it is well done. To be well done must be well practiced, for the mind to comprehend or design?"

Horse—"How can you learn me to stand if you never have no plans or signs for me to comprehend the difference of going or standing. I am always looking for the whip or a jerk of the bridle."

Man—"If you are to know my will, I cannot let you know but by first letting you know my design until understood ; as for your stopping, I then speak to let you know I wish you to go along ; but if you repeat this you know that ——— but as soon as you come to me and commence whipping me and halloo wha, I then look for the whip ; whenever you halloo wha, confidence is lost in you and I am looking for whip, and friend horse shows signs for us to be off."

Horse—"If I am to stand while you get on me, or for you to get seated in your carriage, or otherwsie, you must first take the reins in your hand, then speak to me to let me know when to go ; for if I am to be always on the look for the whip for the sign to start by, I will be off in time to keep clear of it ; for between two opinions, doubting both, it is certain to be as often wrong as right, but guess if you are ready or not."

Man—"How shall I learn you the acquaintance of umbrellas,, handkerchiefs, my hat, gun, or buffalo-skin, and many other things you will meet with?"

Horse—"All those things are easy ; first you must rub me in the face to get my attention, and then let me look at it in a quiet manner and not get me scared and fearful of it, for I cannot always relieve myself of it at my will ; after I look I want to smell it, then to feel it, then hear the rattle of it ; if I feel it at the time you rattle it, I more clearly comprehend it. First commence slowly and continue until understood.— Fire off the gun, at first it should be upwards, as this is a new thing to me."

Let the smoke and all be blown from the face of the horse, for in all cases are changed as soon. In various cases he will stand whilst the fire goes up, when under foot, or at the nose,

many causes much alarm ; some stand well in the woods, others will not let persons stand around them and fire. In all cases of noise keep the face in direction of the noise ; steamboat or car, as it passes turn their face to it ; it is a natural desire to see all things that they hear or smell.

Man—"How do you like the drum?"

Horse—"It is pleasing to the organ of combativeness, as soon as I find it will not hurt me.

Let me look at it and smell it, then rub it against my neck and shoulders, and where it is to rub me as you ride ; then lightly tapping it, then smell it, rub it on me ; soon I will be after you with it, for I am inclined to give my attention to new things, keep my eyes in the direction of the sound, it is easy to get me to follow the drum, or any other music in like manner."

Man—"A flag is pretty in the breeze and sunshine?"

Horse—"Yes, it is."

Man—"You are fearful of its motion?"

Horse—"Yes I am."

Man—"They are all pretty things, innocent, sweet, and good for the horse.

Now the best way is to use the senses God has given you for your safety, for one failure would lose your life by poison, as you are surrounded by poisonous snakes ; but remember to see you are right, then go ahead?"

Horse—"It is in this case as in all others ; or let it be the covering always a flying about ; fold it up, let me see, smell, and rub it over my face ; then commence slowly by waving it over me, and as soon as the proof is enough all is right.

In many cases it is better to put on first the bridle with the gagerarion side reins, martingales and crupper, to hold the head and all in one attitude, that he is more willing to hear your friendly and quiet offering. In this manner you will soon let him know your will in repeated proofs, and all is right then. As soon as it is done, you then change the bridle ; you should begin by showing the same, if he then receives it quietly you may forever depend upon him, if there be no cause for change.

Man—"Why do you pull back when I go into your stall?"

Horse—"I am fearful of you, if you will put your hand on the hip before you come in, and let me know you will not hurt me, I will stand."

Man—"You appear to have been displeased with this stall ever since you got hurt and scared here?"

Horse—"I never like misfortune nor the places that cause them, for it is bad memory that forgets them."

Man—“Why are you fearful of the bridle?”

Horse—“My mouth has been hurt by it and the fingers, my ears pulled, sometimes my eyes; flies have hurt them; I am trying to take care.”

Man—“I will put on the bridle to let you know my will; check-reins, martingale, and crupper to hold all fast; so you are compelled to hold still; then quietly handle the ears and lips; I find there is no hurt, all is right. I will in this case put on and take off another bridle over this until all is right. It may be important in some cases to do so with other things, or to spread a blanket over them, and over the head, and one down the back to the heels.”

Horse—“I am more cautious than fearful. I do not fear the blanket; after examining it closely you may fasten it to my tail, after putting it over the head and down the back to the heels, and letting it fall at the heels and side; but be careful in opening it and spreading it over the body, and frequently letting it go to the tail if it does not cause me to stir up the dust, or in some degree tend to alarm me, you may know it is all right. If you wish it to drag after me, first let there be a piece of cloth hung on each side of me, some six or eight yards long, so as to rub each side of me at the same time; after this is done fasten it to my tail. Let me be as wild as I may, in all cases have me by the bridle, and rub me in the face, speaking kindly to me, and not make me move only by my own will.”

Man—“If you are alarmed at anything around you and will not move quietly, the best way is to show you that you will not be hurt, then you will move off quietly; so when you are alarmed you had best stand until the alarm is over, to prevent a fright.”

Horse—“When you wish me to get on a bridge, ice, or in a boat, or into a strange stable or narrow walk, how will you manage to accomplish your design?”

Man—“I will go before you and show you the best way. I am inclined to look around at it in as many different ways as possible, so by turning about and leading up on one side of the place and then the other; sometimes the difference of the width of the door, the trial will succeed gently. Be careful, the less you suppose the better; as like begets like, he is soon to contend.”

Horse—“Remember that all animals are desirous of regular exercise to wear off the unpleasant feelings produced by standing, and want of water and motion; it is necessary to quiet and compose the system; for those cause a horse to be gentle;

is in a better condition to remain in dry, but that he may be hungry and ready to receive your kind offer of some good food, and then exercise prepares them for further teaching. In many cases you exercise the horse and teach him the use of the blanket on his back, or to the rope over the body and along his sides and legs, to learn him not to kick; you should not fasten the rope to anything as it only tends to scare him."

Man—"Will you lay down on a sand bank or plowed land, or on a snow pile that is free from sticks or stones, and all that is calculated to hurt you?"

Horse—"I am cautious where to place my body, as I will look around me to see if there is anything in my way before I lay down."

Man—"How shall I teach you to lay down?"

Horse—"First rub my fore leg on the inside and out until I find you will not hurt it, then take it up and put it down until I can know there will be no hurt, then loop around the leg to hold it up for fear of its slipping off, then tie a string between the leg and foot."

Put on him the sirsingle, fasten it on top of the back, that you can unfasten it as soon as he lays down, it being very tight, if he is inclined to resist it, he cannot well rear up.

If the horse has not learned to lead, try pulling the bridle, and he will pull back; this will bring him to his knees, and after remaining in this position a short while he will lie down. Now he is down let him remain until you see he is quiet, then approach his face slowly, then first touch him on the face, then rub him down to the foot. Remember always at first to touch lightly, and as you repeat it, the more firmly, and rub them one way, and that is with the hair, to make it smooth, as they are naturally fond of this treatment. Cows, in the winter, by their acts, and also other animals show proof of this fact, as those you see that lick themselves look best.

Man—"What advantage is there in teaching you to lay down? In some cases there is none, but all horses are aware of their condition; some that are wild after being handled in this way seem to be convinced that they will not be hurt, and as they become more convinced by rubbing their legs and flanks, or any other part that will tend to quiet them while down; but if any accident has previously happened to him, you can fasten him and do what is necessary; so all that will make him docile is calculated to make him more useful and safe."

Horse—"All teaching is best that is quietly performed,

and then repeated until well understood; all would perform this; after it is practiced some several times, you may take hold of the foot and the bridle and cause them to lie down, and you may, by fastening up the leg, then gently tapping them on the front part of the leg, will cause them to lie down at your command; if you wish them to sit up on their hips you must place their fore feet out before them, then let them rise gently, and you should stand close to their sides to hold the bridle, and press against them that you may steady them up; in some instances of this kind it is better to use the curb bridle, yet you should be cautious not to hurt the mouth, as it is calculated to produce bad habits.

Man—"You have long been rearing, kicking, pitching and placing your head between your legs?"

Horse—"All creation resents mistreatment, and this is the cause of these actions; some are inclined to practice them more than others."

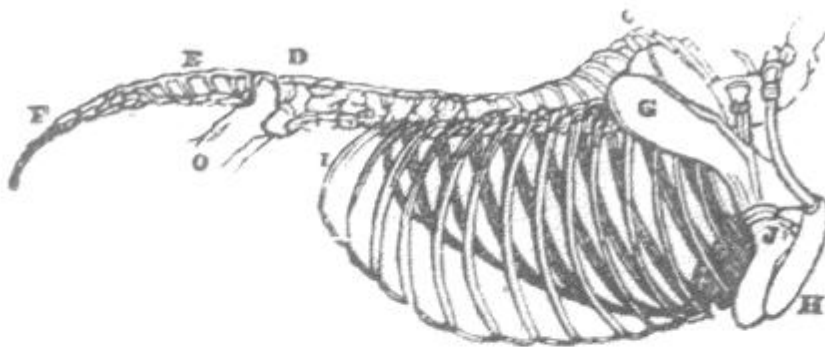
Man—"You say in some cases they are forced to do wrong and some you are forced to make them do right; there are various ways to force them to obedience. The first is to fasten them together with a strong rope around their neck, giving them not more than one foot apart, so that they cannot rear up and fall down, then leading them about to let them know they are fast, mount them and dismount them; in this manner no horse can throw his rider. Another method is to have a leather strap, so strong that it cannot be broken, and drawn around the waist so tight that he cannot rear up.—Another is to put on them side lines, as represented in the plate, to learn a horse to pace."

Horse—"Our reason and observation teach us that things to be done well, the mind must well comprehend the subject of it, and practice makes it the more perfect."

It is so in man and horse, in his walk or in his dance, or in his pace, rack, or in his leap, or in man's leaps or hops, and the progression grows the better form in man or horse for action. This perform the better height in man, length in horse, and width and strength in other animals being equally the better; this is to show that time is necessary to practice well all things in a man, it takes him to the age of twenty or twenty-five years to have that dignified walk and becoming motion in his possession, often to thirty-five. So it is found in the horse, the best speed in trot and pace requires from seven to nine, and greater number of horses both great and small, are, from want of better knowledge, in good strength and action from various causes, many by use in the early part

of life before the system is formed, as many are crooked in legs from it, the teeth matures with the bones, the ribs are all close together at three years, at four the ribs nearest the hip become farthest apart, and for each year afterwards the ribs continue to separate until all are free from each other, and by this you may know the age by feeling.

How to treat your horse when you wish to catch him in the pasture or forest: first in going to him approach him quietly, if he should be inclined to move around you, stand and let him compose himself, and stand and look him when he looks at you; when he is apparently composed, you may slowly approach him, if he moves, stop; and when this is practised you will soon teach him to wait your motion; if he holds his head towards you, you will soon succeed, and when you get to him give him something from your hand, then turn him loose and go to him again; continue this process until you make yourself familiar with him. If his mouth is sore, as young horses are apt to be, he may turn his lips towards you, this is an indication that he is fearful that his mouth will be hurt; but try and get to him, for if you have done as you are told, he will not kick; as soon as his mouth gets well, he will turn his head again; if he is inclined to be wicked, for your own safety put around his neck a hair or cotton rope, (as this kind lasts best), about thirty or forty feet long, so that you may get hold of it and soon learn him to stand; in all cases be careful to fasten the rope close up to the head that it may not choke him, as more danger occurs by letting it come low down, because sometimes in pulling the rope it might slip over the ears and break the neck; this should also be observed in the like process in stables.





THE MEANS OF OBTAINING A GOOD SEAT.

I do not attempt to teach here the profession of riding-masters, but the importance of a *good seat*; which you must have if you wish to ride easy to self and horse. The seat to be a good one, the saddle must be well formed—large enough in length and width to permit you to set easy, so that you are not pressed forward or backward, and so wide as to let the thighs hold a part of their own weight, and not be allowed to drag. And they should not drag all on the hip joints, for all such pivots will chafe and often blister the thighs. The height of the saddle behind and before, should be great enough to support the body if the animal should stumble or jump; so now you will readily see the true attitude is for the weight to pass from the centre of the head to the neck, down the spine on the inward side to the seat, which shows that the straightest position is the most easy and natural, with the bridle in the left hand, the style and manner that you see all the best and safest riders pursue.

If you have not practised this manner of riding, it is easily learnt, and once you get accustomed to it, you will say it is more easy, natural, and far more safe; it is often that persons do not like to ride on horseback, because they have not learnt the true manner of riding. I would invite you to read Mr. Buchanan's *Method of Horsemanship*. It is certain you cannot manage your horse well until you first learn how to manage yourself. If you apply yourself there is pleasure,

the reverse is displeasure. By strict observation it has been ascertained that the most awkward can be learnt to ride well in a few weeks' time. A quiet and spirited horse is the best to learn to ride on; its habits should be submissive to the bridle-reins, notted so as to be at the command of the hand.

I would recommend to those who wish to know how to give their horses a superior style of standing, moving, elevation of head, curving of the neck, carrying the ears forward, carrying a graceful tail, moving with their feet well under them, which gives a light and graceful movement, and will improve them in paying attention and carrying their ears forward, which attitude will make them scare much less, and at the same time will give you a complete command of the bridle. This is the natural attitude in applying their strength and action in throwing the nose out and head up, the reverse power is lost. Think of yourself, and the reverse and power is lessened in proportion to the natural attitude.

I would recommend persons to read Mr. Bucher's Method of Horsemanship; this work is printed in Philadelphia, Pa.; he shows many good things in accomplishing the education for style, movement, and graces. I look upon the accomplishment in the same light as I do of a well accomplished gentleman or lady who is taught to move and dance.

This education can be given by any person that is in the habit of handling them, and can be taught by my pupils in less time than he proposes, which adds equally to the style that accomplishments do to ladies and gentlemen of the best quality in a shorter time, as one is more habitual than the other. The value of the animal is much increased by the good style he is taught to move in submission to the easy motion of the rider, fearless without stumbling or tripping. If you wish a horse of superior style these things must be taught to make his motions natural and easy. All can be much improved and all that show as Military Horses should be handled by the same plan. All ladies' horses must be taught perfect submission, as it makes the hard-mouth submit to the ladies' delicate motion.

By examining the principles of Bucher and myself, you will have more testimony of the truth of both authors, and enable you to practice them.

OF CRUELTY TO ANIMALS.

Shame upon thee, savage Monarch-man, proud monopolist of reason ;

Shame upon Creation's lord, the fierce ensanguined despot :

What, man ! are there not enough, hunger, and diseases, and fatigue,—

And yet must thy goad or thy thong add another sorrow to existence ?

What ! art thou not content, thy sin hath dragged down suffering and death

On the poor dumb servants of thy comfort, and yet must thou rack them with thy spite ?

The prodigal heir of creation hath gambled away his all,—

Shall he add torment to the bondage that is galling his forfeit serfs ?

The leader in nature's pæan himself hath marred her psaltery,

Shall he multiply the din of discord by overstraining all the strings ?

The rebel hath fortified his stronghold, shutting in his vassals with him,—

Shall he aggravate the woes of the besieged by oppression from within ?

Thou twice deformed image of thy Maker, thou hateful representative of Love,

For very shame be merciful, be kind unto the the creatures thou hast ruined ;

Earth and her million tribes are cursed for thy sake,

Earth and her million tribes still writhe beneath thy cruelty :

Liveth there but one among the million that shall not bear witness against thee,

A pensioner of land or air or sea, that hath not whereof it will accuse thee ?

From the elephant toiling at a launch, to the shrew-mouse in the harvest field,

From the whale which the harpooner hath stricken, to the minnow caught upon a pin,

From the albatross wearied in its flight, to the wren in her covered nest,

From the death-moth and lace-winged dragon fly, to the lady-bird and gnat

The verdict of all things is unanimous, finding their master cruel :

The dog, thy humble friend, thy trusting, honest friend ;

The ass, thy uncomplaining slave, drudging from morn to even ;

The lamb, and the timorous hare, and the laboring ox at plough ;

The speckled trout basking in the shallow, and the partridge glean-
ing in the stubble,

And the stag at bay, and the worm in thy path, and the wild bird
 pining in captivity,
 And all things that minister alike to thy life, and thy comfort, and
 thy pride,
 Testify with one sad voice man is a cruel master.

Verily they are all thine: freely mayst thou serve thee of them
 all:

They are thine by gift for thy needs, to be used in all gratitude and
 kindness:

Gratitude to their God and thine,—their Father and thy Father,

Kindness to them who toil for thee, and help thee with their all:

For meat, but not by wantonness of slaying: for burden, but with
 limits of humanity;

For luxury, but not through torture; for draught, but according to
 the strength;

For a dog cannot plead his own right, nor render a reason for ex-
 emption,

Nor give a soft answer unto wrath, to turn aside the undeserved
 lash;

The galled ox cannot complain, nor supplicate a moment's respite;

The spent horse hideth his distress, till he panteth out his spirit at
 the goal;

Also, in the winter of life, when worn by constant toil,

If ingratitude forget his services, he cannot bring them to remem-
 brance;

Behold, he is faint with hunger; the big tear standeth in his eye;

His skin is sore with stripes; and he tottereth beneath his burden;

His limbs are stiff with age, his sinews have lost their vigour,

And pain is stamped upon his face, while he wrestleth unequally
 with toil;

Yet once more mutely and meekly endureth he the crushing blow;

That struggle hath cracked his heart-strings,—the generous brute
 is dead!

Liveth there no advocate for him? no judge to avenge his wrongs?

No voice that shall be heard in his defence? no sentence to be passed
 on his oppressor?

Yea, the sad eye of the tortured pleadeth pathetically for him;

Yea, all the justice in heaven is aroused in indignation at his woes;

Yea, all the pity upon earth shall call down a curse upon the
 cruel;

Yea, the burning malice of the wicked is their own exceeding
 punishment.

The Angel of Mercy stoppeth not to comfort, but passeth by on the
 other side,

And hath no tear to shed when a cruel man is damned.

DEFENCE OF NEUROLOGY.

“The man is thought a knave or fool,
Or bigot plotting crime,
Who for the advancement of his kind
Is wiser than his time.
For him the hemlock shall distil ;
For him the axe be bared ;
For him the gibbet shall be built ;
For him the stake prepared ;
Him shall the the scorn and wrath of men
Pursue with deadly aim ;
And malice, envy, spite and lies
Shall desecrate his name.
But truth shall conquer at the last,
For round and round we run,
And ever the right comes uppermost,
And ever is justice done.

“Pace through thy cell, old Socrates,
Cheerily to and fro ;
Trust to the impulse of thy soul
And let the poison flow.
They may shatter to earth the lamp of clay
That holds the light divine,
But they cannot quench the fire of thought
By any such deadly wine ;
They cannot blot thy spoken words
From the memory of man,
By all the poison ever was bruised
Since time its course began.
To-day abhorred, to-morrow adored,
So round and round we run,
And ever the truth comes uppermost,
And ever is justice done.

“Plod in thy cave, grey anchorite,
Be wiser than thy peers ;
Augment the range of human power,
And trust to coming years,
They may call the wizzard and monk accursed,
And load thee with dispraise ;
Thou wert born five hundred years too soon
Eor the comfort of thy days.
But not too soon for human kind,
Time hath reward in store,
And the demons of our stories become
The saints that we adore.

The blind can see, the slave is lord ;
 So round and round we run ;
 And ever the wrong is proved to be wrong,
 And ever is justice done.

“Keep, Galileo, to thy thought,
 And nerve thy soul to bear ;
 They may gloat o’er the senseless words they ring
 From the pangs of thy despair ;
 They may veil their eyes, but they cannot hide
 The sun’s meridian glow ;
 The heel of a priest may tread thee down.
 And a tyrant work the woe ;
 But never a truth has been destroyed ;
 They may curse and call it crime ;
 Pervert and betray, or slander and elay
 Its teachers for a time ;
 But the sunshine eye shall light the sky
 As round and round we run ;
 And truth shall ever come uppermost,
 And justice shall be done.

“And live there now such men as these—
 With thoughts like the great of old ;
 Many have died in their misery,
 And left their thought untold ;
 And many live, and are ranked as mad,
 And placed in the cold world’s ban,
 For sending their bright, far-seeing souls
 Three centuries in the van.
 They toil in penury and grief,
 Unknown, if not malign’d ;
 Forlorn, forlorn, bearing the scorn
 Of the meanest of mankind.
 But yet the world goes round and round,
 As the genial seasons run,
 And ever the truth comes uppermost,
 And ever is justice done.”

“The spirit of Liberalism, he remarked, was rising in this age, as a mighty power, before which the despotisms of Europe, the power of Mammon, and the spirit of bigotry, were trembling in their strongholds. In this free country political despotism had been crushed, and the tyranny of opinion in science and religion was meeting with the same fate. The whole army of Reformers (of whom many were present) were marching to a sure and brilliant triumph. Medical and scientific reformers were leading an important section of this army,

and they with the reformers of morals and religion would march side by side—their standards floating together and often meeting in the great crusade against evil and ignorance for the redemption of the race.”

AN INQUIRY CONCERNING THE SOULS OF BRUTES.

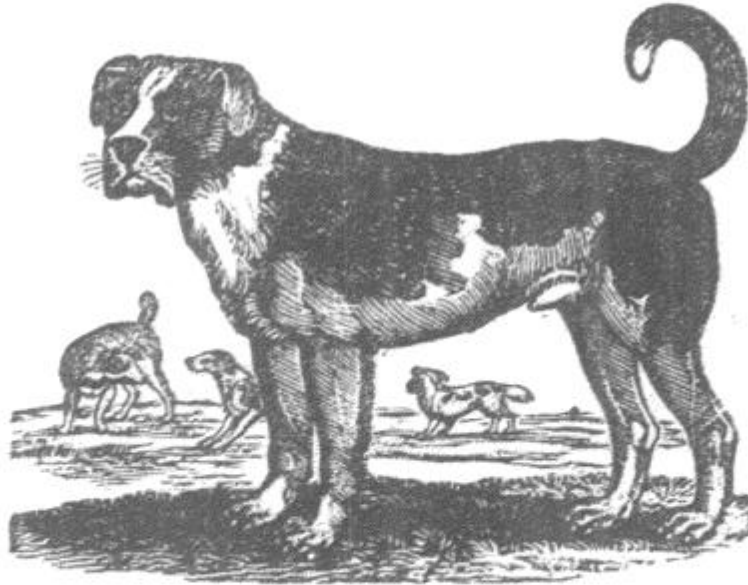
“ Are these then made in vain? Is man alone.
Of all the marvels of creative love,
Blest with a scintillation of His essence—
The heavenly spark of reasonable soul?
And hath not yon sagacious dog, that finds
Or the huge elephant, that lends his strength
To drag the stranded galley to the shore,
And strives with emulative pride to excel
The mindless crowd of slave that toil beside him;
Or the young generous war-horse, when he sniffs
The distant field of blood, and quick and shrill
Neighing for joy, instills a desperate courage
Into the veteran trooper’s quailing heart,—
Have they not all an evidence of soul,
(Of soul, the proper attribute of man,)
The same in kind, though meaner in degree?
Why should not that which hath been—be forever?
And death, O, can it be annihilation?
No,—though the stolid atheist fondly clings
To that last hope, how kindred to despair!
No,—’tis the struggling spirit’s hour of joy,
The glad emancipation of the soul,
The moment when the cumbrous fetters drop,
And the bright spirit wings its way to heaven!

“ To say that God annihilated aught,
Were to declare that in an unwise hour
He planned and made somewhat superfluous,
Why should not the mysterious life that dwells
In reptiles as in man, and shows itself
In memory, gratitude, love, hate pride,
Still energize and be, though death may crush
Yon frugal ant. or thoughtless butterfly,
Or, with the simoom’s pestilential gale
Strike down the patient camel in the desert?

“ There is one chain of intellectual soul,
In many links and various grades, throughout

The scale of nature ; from the climax bright,
 The first great Cause of all, Spirit supreme,
 Incomprehensible, and unconfined,
 To high archangels blazing near the throne,
 Seraphim, cherubim, virtues, aids, and powers,
 All capable of perfection in their kind ;—
 To man, as holy from his Maker's hand
 He stood in possible excellence complete,
 (Man, who is destined now to brighter glories,—
 As nearer to the present God, in One
 His Lord and Substitute,—than angles reach ;)
 Then man has fallen, with every varied shade
 Of character and capability,
 From him who reads his title to the skies,
 Or grasps, with giant-mind, all nature's wonders,
 Down to the monster-shaped, in human form,
 Murderer, slaving fool, or blood-stained savage ;
 Then to the prudent elephant, the dog
 Half-humanized, the docile Arab horse,
 The social beaver, and contriving fox,
 The parrot, quick in pertinent reply,
 The kind-affectioned seal, and patriot bee,
 The merchant-storing ant, and wintering swallow.
 With all those other palpable emanations
 And energies of one Eternal Mind
 Pervading and instructing all that live,
 Down to the sentient grass and shrinking clay.
 In truth, I see not why the breath of life,
 Thus omnipresent, and upholding all,
 Should not return to Him and be immortal,
 (I dare not say the same,) in some glad state
 Originally destined for creation,
 As well from brutish bodies, as from man.
 The uncertain glimmer of analogy
 Suggests the thought, and reason's shrewder guess ;
 Yet revelation whispers nought but this,—
 ' Our Father careth when a sparrow dies,
 And that ' the spirit of a brute descends,'
 As to some secret and preserving Hades.
 " But for some better life, in what strange sort
 Were justice, mixed with mercy, dealt to these ?
 Innocent slaves of sordid, guilty man,
 Poor unthanked drudges, toiling to his will,
 Pampered in youth, and haply starved in age.
 Obedient, faithful, gentle, though the spur,
 Wantonly cruel, or unsparing thong,
 Weal your galled hides, or your strained sinews crack
 Beneath the crushing load,—what recompense
 Can He, who gave you being render you.

If in the rank, full harvest of your griefs
Ye sink annihilated, to the shame
Of government unequal? — In that day
When crime is sentenced, shall the cruel heart
Boast uncondemned, because no tortured brute
Stands there accusing? Shall the embodied deeds
Of man not follow him, nor the rescued fly
Bear its kind witness to the saving hand?
Shall the mild Brahmin stand in equal sin
Regarding nature's menials, with the wretch
Who flays the moaning Abyssinian ox
Or roasts the living bird, or flogs to death
The famishing pointer? — and must these again.
These poor, unguilty, uncomplaining victims,
Have no reward for life with its sharp pains? —
They have my suffrage; Nineveh was spared,
Though Jonah prophesied its doom, for sake
Of sixscore thousand infants, 'much cattle';
And space is wide enough for every grain
Of the broad sands that curb our swelling seas,
Each separate in its sphere to stand apart
As far as sun from sun; there lacks not room,
Nor time, nor care, where all is infinite." — *Tupper.*



THE THEORETICAL EDUCATION OF SPORTING DOGS.

“The good sportsman makes the good dog;” all the secret consists in knowing when to punish him and when to reward. The showman’s dog daily makes this reflection: “If I do not jump I shall be beaten, my master gives me nothing to eat, he prevents my sleeping; if I jump I shall eat, drink, and be caressed; let us jump;” and he jumps. Imitate the showman. Your words, whether harsh or soft, your caresses or your lashes, should be so regulated as to cause ideas to find place in the habits of your young dog. The moment he can run, you should occupy yourself with his education; take him out walking, accustom him to your voice, and make him obey you. You should also accustom him early to the noise of your gun. I have known dogs, with regard to which this precaution has not been taken, being frightened at the report. After his name, the first words made known to him ought to be “to hear;” these should be repeated on every occasion when you call him to your side; caress him when he obeys, punish him when he disobeys. But his punishment should be light; content yourself with a few harsh words and a shake of the whip.

The dog is by nature very sagacious and intelligent; he loves his master; profit by this: act with patience and temper,

and consequently only punish him when he does not do what he knows he ought to do. It is dreadful to see a sportsman breaking the ribs of his dog with the whip; the poor beast crouches at the feet of his master, licks his hand, and seems to say, "Why do you beat? teach me what to do, and I will do it; I ask no better."

The moment the master has spoken the dog should obey; you must not, however, omit anything, above all at the commencement: but never punish him, not even by harsh words, till he has learned and understands that which you desire of him. His obedience should be repaid by many caresses; a few kind words he readily understands, and knows well how to show his gratitude. You should therefore be prodigal of kindness, and at the same time avaricious of punishment. The dog delights in flattery; caressed by the voice and gesture, he feels even the severity of your look, and a quick word is a still greater punishment. Then comes the threat of the whip; then a light pull of the ear; then a little more severity; the lash only on great occasions, and this should only be resorted to in extreme measures, in cases of absolute necessity. Proportion the punishment always to the fault, and when your dog, having been chastised, finishes by, obeying, double your caresses; he knows and feels the difference, and will profit by the lesson. During your walk, take the precaution to study the character of your young dog. If he is gentle and timid, act with much management; if he is wild wicked and cunning, be severe. You are his lord and master; he should read his destiny in your eyes. A word from you ought to make him tremble; another ought to make him jump with joy. But, above all, be careful to make use of the same expressions to obtain the same result. The language of dogs does not admit of synonymes; it requires technical terms, and the vocabulary is of no great length. You should occupy yourself personally with his education; another voice than your own will disturb his ideas; the inflictions will no longer be the same, and the animal will understand nothing.

When your dog is for some time accustomed to this passive obedience, the base of his education, that he comes to you the instant you call him, stops his gambols and his fun at the slightest word from your mouth: you must instruct him to lie down at your command; the front legs should be elongated, the rear ones placed under him. Your dog should always take this position the moment that with a loud voice you cry out "Down." Soon he will attain this habit, and the slightest sign of your hand be sufficient to cause him to

obey. Thus placed you will hold him fixed when walking round him; when you call him he will rise, but not sooner. A well trained dog should lie down in an instant.

He should then be taught to fetch and carry; this may be done in playing with him, but it does not always succeed. You commence by throwing before him a linen cloth, and the moment he seizes it call him; caress him when he returns, and take the cloth from his mouth. Should he drop the cloth previous to your taking hold of it, place it in his mouth again: repeat this lesson continually. The same exercise may be carried on with a stick, which should be covered with a hare or rabbit-skin in order to prevent his holding it too fast with his teeth. He should seize it by the centre: should he seize it by the ends, do not allow it, but commence again. You see dogs which will not fetch or carry, and others which will readily do so: in the former case, you must make use of forcing collars: these collars are made with small spikes within; a string is attached to the collar, and a pull causes the spikes to give severe pain: this should be used carefully at first: if, however, the dog be obstinate, a few severe pulls will bring him to reason.

When your dog brings readily any object thrown for him, then make him bring dead game—a partridge, a quail, or a rabbit. It is only when the dog is full grown and strong he should be made to carry the hare. If he has a hard mouth, and injures the game with his teeth, try the effect of putting pins in the birds.

Your dog carries; he obeys when you call him; he understands the words “to heel,” “fetch it,” “give:” you must teach him to seek: his vocabulary is augmented by the word “seek.” In shooting, the dog ought to go over a hundred times more ground than his master. He should always range in zigzag, to the left, and never pass a tuft of grass without beating it. To teach this manoeuvre you should act thus:—

The dog ranges before you at the distance of fifteen or twenty paces; you should never allow him to be further: you call him on, changing suddenly your direction. The dog comes to you; you make a sign to advance in saying “Seek.” This time you go in a contrary sense: you begin again, and always at the words “turn” all accompany all your movements; and generally dogs will take at once to this manoeuvre from the dislike they have of losing sight of their master when they observe that he changes his direction.

The natural instinct of a well-bred dog will cause him to

“seek” the moment he has a knowledge of game, which experience will tell him where to find it: he will then alone seek it without being told, as a dog has no less pleasure than his master in sporting.

Your dog brings, seeks, and hears; he obeys; the question is then to teach him to point. The greater portion of pointers point naturally: I have known them when six months old follow their mother to the field, and, on seeing her point, quietly place themselves behind her, elongate their noses, elevate the paw, stretch out the tail, and remain till the gun is discharged.

Throw for your dog the cloth or stick as before, saying at the same time “Seek:” the moment he approaches it, draw the spiked collar, at the same time crying out to him “Hold.” When he is on the point, fire your gun, only charged with powder, and do not let him touch the bread till you have fired.

Repeat this lesson until he well understands it, and till he points without the use of a collar. Many sportsmen in such case cry “Seize it” to their dog: I condemn this manner. In the open as in the crowd a good dog ought never to rush in. Game should rise itself, and when the shooter approaches quietly.

If a dog throws himself among partridges or quails, they will rise frightened and wild, and will be far more difficult to hit. When getting up before a shooter they will fly straight. If they be red-legged partridges that the dog runs into, they will rise at once; in a contrary case, they rise the one after another. For a hare or rabbit, the inconvenience of rushing in is still more serious, as the dog once started, will follow the animal; if he is near, you forbear to shoot; you risk the life of your dog. In a marsh the case differs; a dog ought to rush, but you should never permit him till he is well grounded in good principles, and not until you have no fear that this habit will induce him to force his point in a wood or in the fields.

Young dogs are full of spirit; it is necessary to calm them. When you see your pupil carried away by excitement beyond the distance of twenty paces, stop him with a severe voice. When he rejoins you, give him a sign to advance again, saying “gently, gently:” moderate your voice, if his ardour is too great. All these lessons, repeated with patience, will not be lost on a dog of pure breed. You should well know how to distribute your recompenses as well as chastisements: give them at the proper moment, and be prodigal with your favors.

When your dog knows all that we have here named, he is broken, theoretically speaking. Many sportsmen exact more. The education of a pointer is very trifling: he is formed by nature; in his youth he is so excited that he forces and starts the game, but he soon knows better: the instinct of the chase causes him to reason; he continues his gallop, but he stops when necessary.

A sportsman understands the powers of his dog: his listeners, who have scarcely believed his tales, are surprised by facts. I know a man who took a burning stick from the fire, threw it in the centre of the hall, and desired his dog to bring it. The dog walked round the burning brand, fearing to touch it: the order being repeated to him, he at length approached it, and having first extinguished the fire with his urine, seized it in his mouth, and dragged it to the feet of his master.

THE PRACTICAL EDUCATION OF SPORTING DOGS.

PROCURE a living partridge and cut his wings: secure it from time to time, from distance, in sundry grassy spots. Then attach your bird by a string to a tree or bush. It will at first endeavor to escape, but finding that impossible, it will soon lie close; allow it to remain so, and leave it.—Your dog not having observed these preparations, take your gun and the wind, and with him approach the ground that has been touched by the bird. Then repeat the lesson to “seek.” Your dog will become impatient: as soon as he scents the game, he starts; stop him with a gentle remonstrance; make him return to your side, and cool his ardour by the words “Gently, gently.” As you have only one partridge, and that must die in the lesson, be careful of his life, and allow the practice to last as long as possible. Tell your dog to seek; make him turn to the right and the left; and lastly, when he approaches the game, cry loudly to him to “hold.” Should he not stop, a good pull at the spiked collar will instantly have the effect. Then approach your dog, saying to him quietly, “Hold, hold!” Walk round him: your voice and looks will fix him to the spot he has taken. When you have done this several times, take the partridge, put it under his nose that he may scent it without permitting him to touch it. Then let the bird go behind you: take your dog away, and recommence your lesson. Do this several

times, and above all follow the advice given you before: and the moment your dog has pointed at the bird without the aid of his collar, kill the partridge and make him bring it. When the dog precipitates himself on the bird, and enjoys the pleasure of holding it in his mouth, cut the string by which it has been attached. Assure yourself that he does not bite the bird, and that he gives it to you the moment you desire him. Throw it three or four times in order to make him bring it again, and recommence this practice as often as you can procure a living bird.

This lesson may be also followed up with a rabbit in a courtyard. It is not necessary to secure it; this animal accustomed to live in burrows, will not endeavor to save itself in an open space: it will remain quiet. If your dog runs after a hare or rabbit which gets up, he should be severely punished: this custom will cause you to miss many a shot; he should not move until your gun be discharged.

We are now arrived at the period to take your dog to the field. If he is wild, place the collar on him and allow the cord attached to it to trail on the ground; you will then always master him by placing your foot on it. The animal receives a severe shock, the sharp points run into him and soon correct him. But each time that you so stop him you must tell him the reason. If he is wild on his beat, you must say "Gently, gently." If a bird rise before him and he desire to follow it, say "Hold, hold." These expressions, or any other constantly repeated, will end by being perfectly understood, and each time you pronounce them your dog will understand your desire. When you are shooting to a young dog, fire under his nose, if you have the chance, at the game he has pointed. The bird is often so destroyed: what does that signify? such will not ever be the case.

Several of these practical lessons will confirm the dog in his points; and he will soon make the following reflection: "If I move the game is off; if I stop it will be killed; and I shall take it in my mouth, and plunge my nose in its blood. I rejoice. Do not move."

Some partridges rise: you kill two or three; your dog only brings back one; do not ask him for the others; they will serve each in their turn for an excellent lesson. You charge your gun with powder only; take your dog with the wind towards a dead partridge—it is still hot; your dog will soon seek it, and will point to it as to a living bird. A general fault among young dogs is to beat with their noses on the ground; they follow their game by the track, and take it

against wind. This must not be permitted, as in such manner their scent is less strong: at times they do not scent it at all. The moment you see your dog with his nose on the ground, approach him, make him hold up his head, and oblige him to seek elsewhere. The moment he receives by the wind some particles of scent, he will follow them with his nose in the air. Partridges hold far better before a dog which hunts by the wind than before one that follows on their track. If in the latter case he point, it is only by chance, and when the game is surprised and lies close under his nose.

Never allow your dog to run after partridges: the first time he does it punish him severely. Slip on the cord, and give him a smart shock of the collar, using the words "hold and "to heel." On a second occasion the whip must be applied, having care at the same time to make him sensible by words of his chastisement. There are dogs with whom both the above modes of correction have not the desired effect: their excitement carries them after the game, and they become deaf to the voice of their master; they require a more severe lesson, a charge of No. 7. from your gun from forty paces in their flanks. At this distance such is not dangerous; it tickles, causes a few drops of blood to flow, and the dog is none the worse. All my dogs have had this dose, and they are as well as I am. You finish by preventing this bad habit; their own judgment and experience soon prove that the advantage is on the side of the wings. But as regards the hare, running as themselves on the ground, they always hope to catch it, because they recollect having taken several; they forget the fact of their having been first wounded. "I caught one yesterday," says the dog; "why not another to-day?" If it be possible, you must prevent their being followed: if you are not successful, be not too angry. The first time you find yourself shooting in company, and have a young dog, be careful to prevent his running to the discharge of another gun. A few lashes of the whip will generally in such cases have the desirable effect. If your dog, when on the point, endeavors to snap at a hare or a rabbit, a quail or a partridge, and by chance seize the game, you should run up to him, threaten him, oblige him instantly to drop it, and kill it with your gun. If you suffer this enormity, your dog will believe he knows better than you; he will endeavor to seize your game on all occasions, will seek it and you will lose your shots.—The dog must be well satisfied that he can do nothing with game without his master—which is the fact.

When your dog has committed a serious fault, and you

judge an application of the whip necessary, you must seize him suddenly and apply it. But if, knowing his fault, he hesitates to approach you, you must not call him as a friend in order to punish him: this will be a reason he will not forget. Approach him angrily, and catch him if you can: in all cases, if he flies, he is aware of having committed a fault.

Now that your dog knows all that he ought to know, there is only one thing wanted: it is to make him take to the water. Be careful not to face him, or throw him in, neither to select cold weather; if you do so, you will make it ever repulsive to him. This lesson should be taught during the summer, when the water is warmed by the sun. Take him to the side of a stream which is not deep, so that he may enter the water gradually. Throw in a stick or any thing else, and make him bring it. If he refuse, wait till he is hungry, then throw in some pieces of bread, at first near, then farther, and caress him when he obeys you. By and bye, when he seems without fear, throw in at some distance a dead partridge, which you have previously caused him to scent, and without hesitation he will throw himself into the water. To finish this lesson, put a duck into a pond, and tell your dog to bring it; the duck will plunge, and the dog will pursue without catching it. When you have amused yourself sufficiently with this chase, shoot the duck, and your dog will proudly bring it on shore.

The good sportsman makes the good dog: kill plenty of game, and your dog will become perfect. The sporting dog judges his master as a soldier judges his general. If he be a bad shot, the dog becomes careless. It is certainly by egotism that man causes a dog to submit to all his lessons, that he chastises him with the collar and the whip: but he also provides for him pleasures, which on the other hand he never would have enjoyed. If the dog could speak, he would thank you: without him you could do little; without you he could do nothing. The sporting dog loves the chase above all; he loves it as much as the most ardent sportsman. If he is such, the sight of a gun animates him; if he is lame, he will drag himself after you; if he sleep, he dreams of partridges, rabbits, and hares. I have even known dogs wake up at the words "gun," "quail," "partridge." This effect has been caused without being said on purpose; merely the expression in conversation has caused them to move the head or sigh. The dog is man's best friend; it may be said he was created for his companion. Frederick the Great was one day in the midst of his courtiers, who assured him of their

devotion to his person. The king listened to them, when at the moment, the door opened, and his dog came bounding into the room. "You say well my, friends," added the king; "but here is my best friend."

It would require ten volumes to relate the history of celebrated dogs; I shall therefore confine myself to one, as a finish. During the Emigration, a marquis of my acquaintance was received at the residence a German baron. On the first day his astonishment was great at remarking at the baron's table an enormous dog, seated in an arm-chair. When an attempt was made to serve any one before him, some tremendous sighs burst from his breast, and he was appeased on his plate being filled. "You are surprised, sir," said the baron, "to see a dog at my table, and treated as we are. When you are informed as to the value I place on the attachment of this admirable beast, you will not blame me I hope. My château took fire during the night; I was asleep; my servants fled and forgot me. I should certainly have been burned to death, when my dog seized me by the feet, awoke me, led the way through the flames, and I was saved. I owe my life to him, and I do not feel that I do too much for him, when, for the rest of his days, I give him all the enjoyments I can provide for him."

110 NASSAU STREET,

27th December, 1853.

DEAR SIR: You are at liberty to copy from my work on Comparative Physiognomy to the extent you propose, or further if you are disposed to do so. It pleases me that any one should so highly appreciate that work as to desire to copy from it. Your art of training horses, and the science upon which the art is based, would interest me very much, and a copy of your work, you may be sure, will be thankfully received.

Respectfully, yours,

J. W. REDFIELD.

DENTON OFFUT.

I quote my own sentiments by others, to show that others see the cruelty that is practised. I regard Dr. Redfield as a philosopher, a genius, and a God like man, desirous of the happiness of all creation. I would recommend his book to all, as a teacher in mercy and christianity.

D. O.

COMPARATIVE PHYSIOGNOMY.

The reader who has felt a sufficient interest in our subject to accompany us to the last chapter, will have made a number of observations in confirmation of our own, and some, no doubt, that are really or apparently contradictory. We do not claim to be infallible, and the reader is not bound to believe anything that he does not see, to be true. Of the statements we have made, and respecting your interest in them, we would say to you, gentle reader, as we heard an Irish apple-woman say to a boy who asked her for an apple: "If you see one at all that pleases yourself, take it." This conveniently illustrates the gentlemanly relation, as well in respect to ideas as in respect to bodily hospitalities, at the same time that it illustrates the natural gentility of the Irish, and, *a priori*, the gentility of the dog. The language used by that poor Irishwoman, and the common speech of Irishmen, is such as is heard when one gentleman addresses another, and of the kind that is used in genteel society.

Dear reader, we fancy you asking us mentally to let go your button, at the same time that you are attentive polite. You must not suppose that we have inflicted upon you all that we might have done, had we been disposed to trace the resemblances between men and all inferior animals of creation. We must receive credit for not having even mentioned all the resemblances between the men and animals that we have treated of. For example, we might have asked you to observe that, of the two classes of negroes, the one open their mouths like fishes, and the other their jaws like elephants. Then we might have directed your attention to the fact that the English are inclined to drawl, and utter half their words in the inspiration of the voice: to use aspirates where they ought not, and to leave them off where they belong: like the cow in her long-drawn loo, in her moo-hoo; in her *h* as in *hoo*, when she takes back her breath; and in her neglect of the *h* as in *hoist*, when she has a potato in her mouth, which gives her occasion to expel what she cannot swallow. It is evident that other animals, the dog and the cat for example, when they endeavor to expel anything from their throat, gives the sound of *h*; and that in inspiration they give only the vowel

sound, if any. It is in consequence, therefore, of a resemblance to the cow, that the Englishman says, "Ear me," and "Lend me your *hears*." It is worth mentioning, also, that one of the most celebrated places in England is called "Oxford." Then, if we had said all that we might have said about the resemblance between the Chinaman and the hog, we should have remarked upon the similarity of sounds—as, for example, the words Tchong-Koue, Ning-po, Hong-kong, Kwang-tung, and the Choos and Fooos of the Chinese language, partake of the nasal grunt and the *foo*-ing of an old hog; while Fukeen, Pekin, Pechele, and the like, are akin to the squaking of a little pig. As the life employment of the hog is chewing at first-hand (for he has no time to spend in chewing the cud,) it is not strange that nearly every other word of the Chinese language has a "chooo" in it, so that the Chinese in conversing do little besides *choo*. Then we might have spoken of the similarity of the French language to that of the grog, till with the twirling of linguals about our ears we might have fancied ourselves in Bedlam. We might have drawn comparison between the languages of men and animals, as between the faces of these and those; but we did not, and there are many other things we did not touch upon.

It may be thought that in the preceding chapters there is no orderly arrangement; but there is an order, and it is according to harmony, and for that reason it is not easily perceived. Harmony is so delightful, that we perceive only that it governs us, and not that it governs us by laws. When we have unfolded the science of Nature more fully, we shall analyse and understand that which we are now sufficiently happy in feeling. From feeling we shall glide into perceiving, from perceiving into understanding, and from understanding into something higher.

We are hard-hearted indeed if having studied our relationship to the inferior animals, we are not disposed to treat them more kindly. We sympathize with them for we perceive that the same faculties which warm our breasts animate theirs.—We share with our "creature comforts," for they are creatures more than we, and our superior reason enables us to provide for those comforts better than they. Our moral and religious inspiration, by which we are distinguished, prompts us to confer happiness on others. If we are not true to this, we are inhuman—that is, we are neither men nor brutes—and this never can be said of inferior animals. *Creatures* are not bad. A person with a good natural disposition is called a "good

creature," and it is in reference to our natural dispositions that we are called the "creatures of God."—"An unfortunate creature" we often hear of, but who ever heard of a wicked creature, except it were of some one whose wickedness is synonymous with ugliness, such as is observed in the cow or the goat? If we say to a person, "You wicked creature!" the word "creature" shows that we do not mean it. The word "wicked!" is equivalent to saying of the person thus addressed, that—

"E'en his failings lean to virtue's side!"

A *perverted* character has never the term "creature" applied to it. It is evident, therefore, that our relationship to the lower animals is no disgrace to us if it is not to them.—In this case, we are "children of Nature," as they are, but more perfectly, for we are also the "children of God." It is an honor to be the children of "the common Mother" when wisdom is given us to know our Father—which wisdom is not given to the lower animals. A true nobleman will despise his poor relations: he knows that his origin is humble, and that all his riches and honors are conferred by his Sovereign.

"Man is an animal." With this humiliating truth we commenced our subject, and with this we conclude. But for the use which we should make of this knowledge, we adopt the sentiments of an old author:—

"Man considered in himself, and in his own *proprium*, is nothing but a beast, having like senses, like appetites, like lusts, and also like affections in every respect; his good and best loves are likewise very similar, as the love of associates of his own species, the love of children, and the love of his mate; so that there is no difference between them in any respect. But that he is man, and more excellent than the beasts, is, because he has an anterior life, which beasts have not, nor are capable of having; this life is the life of faith and of love from the Lord; and unless this life were to influence and prevail in each of these properties which he has in common with the beasts, he would never be anything else but a beast: as, for instance, in respect to love towards his associates, if he loved them only for the sake of himself, and there were not in the love something more celestial and divine, he could not be called a man in consequence of that love, because it is similar with beasts: and so in other instances: wherefore unless the life of love from the Lord were in his will, and the life of faith from the Lord in his understanding, he would in

no respect be a man. By the life which he has from the Lord, he lives after death, because thereby the Lord joins him to himself; and thus has a capacity of being in heaven with the angels, and of living to eternity: and although man lives a wild beast, and loves nothing else but himself, and the things which respect himself, yet the mercy of the Lord is so great, being divine and infinite, that he never leaves man, but continually breaths into him his life by the angels, which notwithstanding his perverse reception thereof, still gives him a capacity of thinking, of reflecting, of understanding what is good or evil, whether it relate to moral, civil, worldly, or corporeal life, and thereby of discerning what is true or false."

Mankind in general find their resemblance in the ape, as was shown in a preceding chapter; while races of men, and individuals in particular, resemble animals of species and variety. As to *animals* in general, we also find their resemblance in the ape: it is easy to see that the quadrumana resemble both beasts and birds, living as they do in trees, and grasping with the posterior members, as birds do, and belonging at the same time to the mammalia. It is evident, therefore, that every man, in resembling the ape, resembles the entire animal kingdom, and that by resembling each individual beast and bird he resembles each individual man to whom such beast or bird bears a resemblance. As all men have a resemblance in common, it is certain that each individual man has in himself the peculiarities of all other people, so blended, that only his own individual peculiarity is conspicuous. Also, as the predominant animal nature is *bovine* in one, *equine* in another, *canine* in another, *feline* in another, and so on—it is evident that there is in every individual a congregation of all sorts of animal natures, and that the difference between people is the predominance of one or other of these elements. Of course, it is the element that is most conspicuous in an individual that constitutes his resemblance to a particular beast or bird.

Being fortified by reasoning, we have no hesitation in saying, figuratively, that man's breast is a menagerie of animals, of beasts and birds, clean and unclean, wild and tame. To name them and govern them by morality and religion, is his highest duty and his highest delight. He transforms them into the likeness of the higher faculties by which they are governed; and with these they are so admirably blended, that they are no longer animal, but human. The animals of the external world still resemble him, for he subjects to the same discipline as those within. He masters them by love and kind-

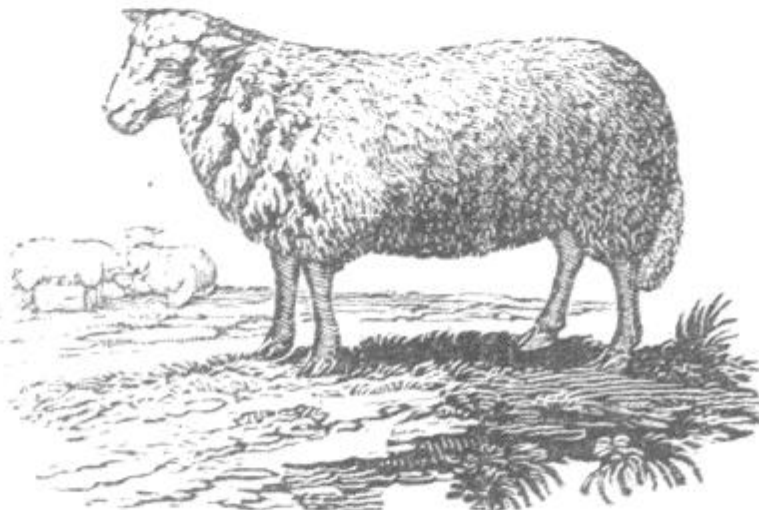
ness; he makes them beautiful and useful, peaceful, harmonious, and happy. He exhibits in himself (and it is shadowed forth in the animals around him) a fulfilment of the prophecy:

“ The wolf also shall dwell with the lamb,
 And the leopard shall lie down with the kid;
 And the calf, and the young lion, and the fatling, together;
 And a little child shall lead them.
 And the cow and the bear shall feed;
 And the lion shall eat straw like the ox.
 And the sucking-child shall play on the hole of the asp,
 And the weaned child shall put his hand on the cockatrice's den
 They shall not hurt nor destroy in all my holy mountain.”

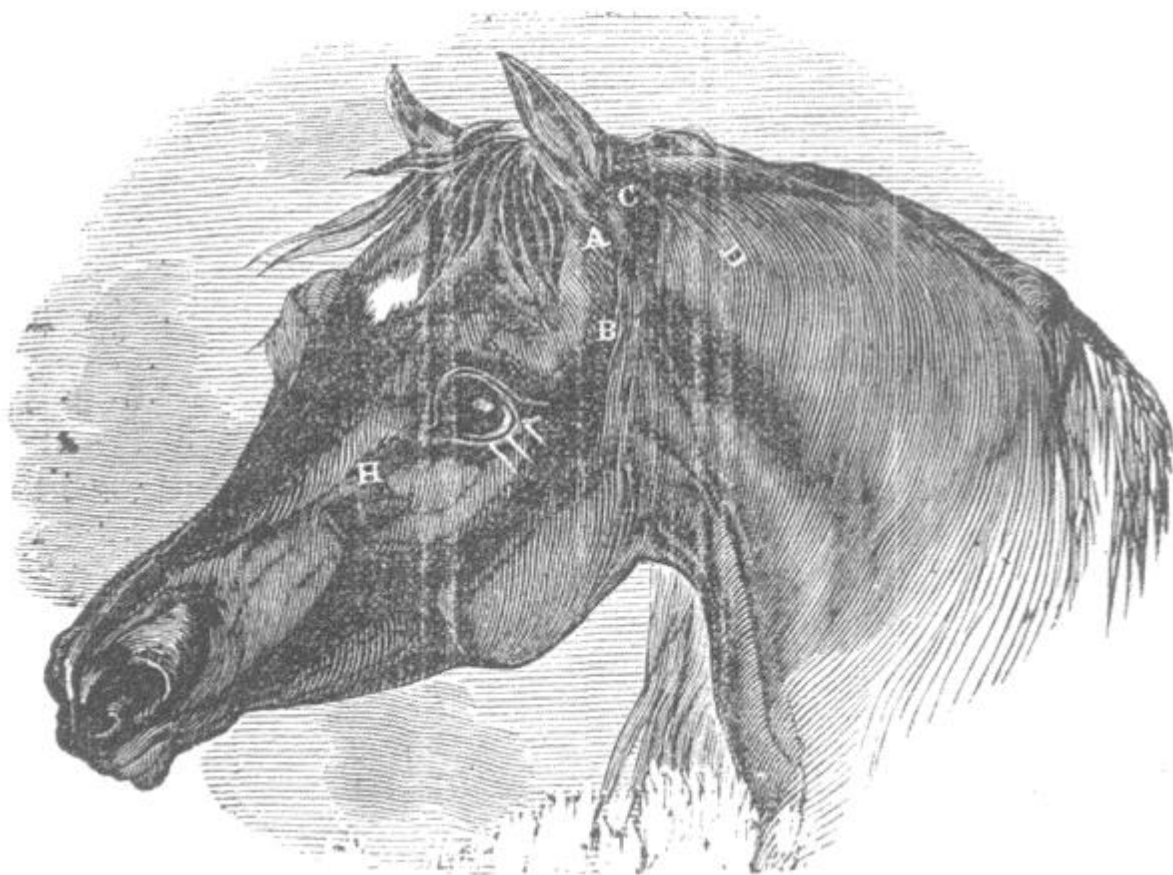
The helpless condition in which man is born makes it necessary that he should be endowed with a superlative degree of that faculty which prompts him to look out for his own interests. It is difficult to see how a person could be possessed of individuality without self-love for its basis, or recognise the individuality of others without first recognising his own, or ever love his neighbor until he had first loved himself. “Charity begins at home.” Man is required to “love his neighbor as himself,” which proves that the standard by which he has to measure his love for his neighbor exists beforehand, and that it is right and proper that he should have loved himself first. Self-love, therefore, is good; it is necessary to a weak and dependent being; and *all* beings are weak and dependent, and the Creator has given them self-love that they may supply their deficiencies. And what *are* their deficiencies, and what their wants? Their first wants are physical, their second sensual, their third rational, and their fourth supernal. As long as these wants continue, so long self-love must be active; but in the degree that these wants are supplied, it becomes man to be charitable, and to minister to the wants of others. It is only after these wants are supplied, that man can be wickedly selfish. The object of self-love is to prompt him to take care of himself; and if he desire that others may take care of him, he is selfish beyond what Nature intended. An animal requires all the self-love that Nature has given it to supply itself with necessaries; and it is contented to “shirk for itself” if its exertions are capable of supplying its wants.

At the season of the year when it is capable of doing more than this, Nature bestows offspring, and the care of the parents is expended upon other objects than themselves.—Thus self-love in animals is kept within bounds; and it is proved by this that the inferior creatures are good. But with

human beings it is otherwise. They wish to be taken care of by others, and to be supplied with multitudes of things that are not necessary; and for this end they acquire artificial appetites, such as the appetites for tobacco, tea, coffee, opium, and alcoholic stimulants. This perversion of self-love in man is from the perversion of the privilege of dependence, which is extreme at the moment he is born, which is again extreme at the moment of his departure from this world: it is from the perversion of his perfect dependence upon his parents for the supply of his bodily wants at the commencement of his life, and of his perfect dependence upon his Creator for those things which alone can satisfy the cravings of an immortal soul at the period of his transition into another state of existence. Between these two extremes of dependence there is abundant room for self-exertion, self-improvement, and self-dependence, and there is occasion for the exercise of benevolence toward others when benevolence toward self has accomplished its object. What then must be the depravity of man, when, instead of loving himself and taking care of himself for the sake of his neighbor, he loves his neighbor in keeping for the sake of himself? Look at those who in all countries oppress and enslave the bodies and souls of men, and at those who in their weakness and poverty exercise their tyrannical selfishness in oppression of the inferior animals, and and you will see. The animal which the natural man resembles, viz., the ape, is selfish and disgusting in the extreme.



“ The Lord is my shepherd; I shall not want;
 He maketh me to lie down in green pastures:
 He leadeth me beside the still waters.
 He restoreth my soul:
 He leadeth me in the paths of righteousness for his name's sake.
 Yea, though I walk through the valley of the shadow of death,
 I will fear no evil: for thou art with me;
 Thy rod and thy staff they comfort me.”



THE PHRENOLOGY OF ANIMALS.

The *principal* conditions upon which the mental manifestations are found to depend. These are mainly as follows :

I. THE SIZE OF THE BRAIN, other conditions being equal, is found to be the measure of the *aggregate* amount of the mental power; and the relative size of the several *organs* of an individual, indicates the proportional strength and energy of his corresponding *faculties*.

It should, however, be remembered, that the *amount* of one's mental power, depends even more upon these "*other conditions*," such as his organization, or the vigour of his constitution, the condition of his nutritive organs, the state of his health, his temperament, the amount of excitement under which his various faculties act, his education, habits, diet, &c., than upon the *size* of his brain alone. Accordingly, in consequence of different degrees of health, rest, fatigue, excitement, &c., the manifested *quality* or *amount* of a man's mental power, will vary twenty, forty, and even eighty per cent., whilst the *kind* or *quality* will differ little if any. Hence, both in proving phrenology, and also in applying its principles, the province of the phrenologist is to point

out the *character* or *kind* of talents and mental power, rather than their precise *amount*; and yet, if he is informed as to those "other conditions," (and it is not only his *right* to know them, but preposterous in him to pronounce without such knowledge,) he can ascertain very nearly the *amount*, as well as the kind, of intellect and feeling.

AVERAGE.—One having an average-sized brain, with activity only *average*, will discover only an ordinary amount of intellect; be inadequate to any important undertaking; yet, in a small sphere, or one that requires only a mechanical routine of business, may do well with activity, *great or very great*, and the organs of the propelling powers and of practical intellect, large or very large, is capable of doing business, and pass for a man of some talent, yet he will not be original or profound; will be quick of perception; have a good practical understanding; will do well *in his sphere*, yet never manifest any traces of greatness, and out of his sphere, be common-place: with *moderate or small* activity, will hardly have common sense.

FULL.—One having a full-sized brain, with activity *great or very great*, and the organs of practical intellect and of the propelling powers, large or very large, although he will not possess *greatness* of intellect, nor a deep strong mind, will be very clever; have considerable talent, and that so distributed that it will show to be *more* than it really is; is capable of being a good scholar, doing a fine business, and, with advantages and application, of distinguishing himself somewhat, yet he is inadequate to a great undertaking; cannot sway an extensive influence, nor be really great: with activity *full or average*, will do only tolerably well, and manifest only a common share of talents: with activity *moderate or small*, will neither be nor do much worthy of notice.

LARGE.—One having a large-sized brain, with activity *average*, will *possess* considerable energy of intellect and feeling, yet seldom manifest it unless it is brought out by some powerful stimulus, and will be rather too indolent to exert, especially his *intellect*: with activity *full*, will be endowed with an uncommon amount of mental power, and be capable of doing a great deal, yet require considerable to awaken him to that vigorous effort of mind of which he is capable; if his powers are not called out by circumstances, and his organs of practical intellect are only average or full, he may pass through life without attracting notice, or manifesting more than an ordinary share of talents: but if the perceptive faculties are strong or very strong, and his natural powers put

in vigorous requisition, he will manifest a vigour and energy of intellect and feeling quite above mediocrity; be adequate to undertakings which demand originality of mind and force of character, yet, after all, be rather indolent: with activity *great or very great*, will combine great *power* of mind with great activity; exercise a commanding influence over those minds with which he comes in contact; when he enjoys, will enjoy intensely, and when he suffers, suffer equally so; be susceptible of strong excitement; and, with the organs of the propelling powers, and of practical intellect, large or very large, will possess all the mental capabilities for conducting a large business; for rising to eminence, if not to pre-eminence; and discover great force of character and power of intellect and feeling: with activity *moderate*, when powerfully excited, will evince considerable energy of intellect and feeling, yet be too indolent and too sluggish to do much; lack clearness and force of idea, and intenseness of feeling: unless literally driven to it, will not be likely to be much or do much, and yet actually *possess* more vigour of mind and energy of feeling, than he will manifest.

VERY LARGE.—One having a very large head, with activity *average or full*, on great occasions, or when his powers are thoroughly aroused, will be truly great; but upon ordinary occasions, will seldom manifest any remarkable amount of mind or feeling, and perhaps pass through life with the credit of being a person of good natural abilities and judgments, yet nothing more: with activity *great*, strength, and the intellectual organs the same, will be a genius; endowed with very superior powers of mind and vigour of intellect; and, even though deprived of the advantages of education, his natural talents will surmount all obstacles, and make him truly talented: with activity *very great*, and the organs of practical intellect and of the propelling powers large or very large, will possess the first order of natural abilities; manifest a clearness and force of intellect which will astonish the world, and a power of feeling which will carry all before him; and, with proper cultivation, enable him to become a bright star in the firmament of intellectual greatness, upon which coming ages may gaze with delight and astonishment. His mental enjoyment will be most exquisite, and his sufferings equally excruciating.

MODERATE.—One with a head of only a moderate size, combined with *great or very great activity*, and the organs of the propelling powers and of practical intellect, will possess a tolerable share of intellect, yet appear to possess much more

than he does ; with others to plan for and direct him, will perhaps execute to advantage, yet be unable to do much alone, will have a very active mind, and be quick of perception, yet after all, have a contracted intellect ; possess only a small mental calibre, and lack momentum both of mind and character : with activity only *average or fair*, will have but a moderate *amount* of intellect, and even this scanty allowance will be too sluggish, so that he will neither suffer nor enjoy much : with activity *moderate or small*, be an *idiot*.

II. THE STRENGTH OF THE SYSTEM, including the brain, or what is the same thing, upon the *perfection or imperfection of the organization*. Probably no phrenological condition is so necessary for the manifestation of mind, as a strong, compact constitution, and energetic physical powers. Even after a violation of the laws of the organization has brought on disease, a naturally vigorous constitution often retains no small share of its former elasticity and energy, and imparts the same qualities to the mental operations ; but in proportion as this is defective, weakness and imbecility of mind, will ensue.

III. THE DEGREE OF ACTIVITY.—In judging of the manifestations of the mind, the *activity* of the brain is a consideration quite as important as its size. Whilst size gives power or momentum of intellect and feeling, activity imparts quickness, intensity, willingness, and even a restless desire, to act, which go far to produce efficiency of mind, with accompanying effort and action. Under the head of size, however, the effects of the different degrees of *activity* were presented, and need not be repeated here.

The temperaments are capable of being greatly modified, and they are even radically changed, by the habits, diet, exercise, &c., of the individual. The hard-working animal, who exercises his muscles mainly, and cultivates but little sensitiveness, either of body or feeling, and the fashionable belle who experiences the other extreme of excessive sensibility, both physical and mental, will serve to illustrate this point.

The author is of opinion, that, in the case of the temperaments, as in that of the several organs, the nearer equal they are, the better for the manifestation of both the physical and mental energies, and for long life.

THE PROPELLING OR EXECUTIVE FACULTIES.—One having combativeness, destructiveness, firmness, self-esteem, hope, &c., large or very large, and an active brain, has impetus, enterprise, and efficiency, and *drives* what he takes hold of ; these faculties being to the mind what steam is to the engine, or wind to sail.

AVERAGE OR FULL, is between one with those organs large and small.

MODERATE OR SMALL, takes hold of things softly and with mittens on, lacks efficiency; and has not enough "go ahead" in him.

Upon the **TEMPERAMENT**, by which term phrenologists designate the degree of energy with which various classes of the corporal organs operate. With some propriety they describe *four* temperaments.

1. **THE BILIOUS**, or that in which the *osseous* and *muscular* portions of the system predominate in activity, produces great physical strength: endurance and power of body and mind; with great force and energy of mind and character. Signs: a bony, muscular, athletic frame; black hair; dark eyes; a strong, steady pulse; hardness of flesh; bones projecting, &c.

2. **THE LYMPHATIC**, or that in which the various secreting glands are the most active portion of the system, produces an ease-seeking disposition of mind and body, and aversion to effort. Hence it tends to lengthen out life, as is evident from it predominating more in young horses; and advanced age. Signs: soft and abundant flesh; slow but steady pulse; love of ease; light hair; and great size of abdominal viscera.

3. **THE SANGUINE**, or that in which the *arterial* portion of the system, which gives circulation to the various *fluids*, particularly the blood, predominates in activity, is accompanied with strong feelings, warm passions, and a great amount of ardour, zeal, activity, and warmth of feeling, yet with less endurance and power. Its predominance indicates a strong constitution; love of physical pleasure; and a stirring, business talent: combined with much of the lymphatic, it is less favorable to the *mental* manifestations, and requires much exercise in the open air. Signs: sandy or auburn hair; soft skin; a fresh, florid countenance; blue eyes; a strong, rapid pulse; warm passions; a deep and broad chest and shoulders; a stout, well-built frame, &c.

4. **THE NERVOUS**, or that in which the brain and the nerves predominate in activity, gives clearness of perception; quickness of mind and body; susceptibility to excitement, with less power and endurance. Signs: light, fine, and thin hair; delicate skin; smaller frame; head relatively large; small chest; rapid, but not hard or strong pulse, &c.

The nervous predominant, with a large share of the bilious and sanguine, combines a great amount of power and endur-

ance of mind and body; with great activity and excitability; and is more favorable to intellectual pursuits, and vigor of thought and feeling, than perhaps any other. When one of this temperament enjoys, he enjoys intensely, and when he suffers, his sufferings are extremely excruciating.

The sanguine-bilious is not an unfavorable temperament, nor particularly favorably, whilst it gives a great amount of mental *power*, it is frequently, though not always, coupled with some manifest deficiency.

The nervo-bilious unites great power with great activity, and, although it seldom gives brilliancy, it produces that *kind* of talent which will stand the test, and shine in proportion as it is brought into requisition. A good share of the sanguine added, is more favorable to the manifestations of mind, and also, of physisal power, than probably any other.

The bilious combined with the lymphatic, gives considerable power of mind, and strength of body, accompanied with so much heaviness and indolence as to be less favorable; yet if one with this temperament acts under strong excitement, his efforts tell with power upon the object in view.

The nervo-sanguinous, with but little bilious, gives extreme intensity of action, and perhaps brilliancy of talent with vivid feelings and conceptions, yet, for want of the strength imparted by the bilious temperament, the mental operations will be fleshy, rapid, and too intense to remain long enough to amount to much, the activity being too great for the strength.

But the following classification and naming of the Temperaments, appears to the author more simple and comprehensive, and less liable to be misunderstood, than those now used.

PERCEPTIVE FACULTIES.

INDIVIDUALITY.

1st. *Observing and individualizing power and desire; curiosity to see and know; disposition to specify, personify.*—This faculty is large in the horse and elephant. They remember their friends, and the various things they see. If alarmed by any dress or animal they appear never to forget it. If any uncommon thing is in their stable or lot, they are seeking to know what it is. This gives desire to see and know.

2d. FORM. *Cognizance and recollection of shape, or configuration.*—This faculty aids to distinguish one animal from

another. If a man has a gentle horse, let him change his shape by crawling on the ground, or going on his hands and feet, and the horse will not let him come near him.

3d. SIZE. *Cognizance and knowledge of relative magnitude, bulk, &c.*—Horses will sometimes obey women or children better than men, this may be owing to having been fed by them more than by men. All stubborn horses when suddenly pulled by the bridle refuse to obey, but if gently pulled, and spoken to with a soft tone of voice, you may soon teach them your friendly design, and make them prompt to obey all your orders. A loud voice will control docile more than stubborn horses, the voice should be varied according to the nature and disposition of the horse. Those things which your horse appears to be afraid of, such as a gun, umbrella, or buffalo skin, being presented to him will remove his stubbornness.

4th. WEIGHT. *Intuitive perception and application of the principles of specific gravity, projectile forces, momentum, balancing, resistance.*—This you find is not common, for a horse to rear by a blanket being on his back, but when a man is on him he often shows different behaviour.

5th. COLOR. *Perception and recollection of colors, hues, tincts, &c.*—The primary colors in their different degrees of brilliancy, and their innumerable combination, it is through this faculty that they notice the various colors of food and other objects that they meet with.

6th. LOCALITY. *Cognizance and recollection of relative position, forms and geography of places, desire to travel, see the world, &c.*—The recollection of places, courses, and distances; the horse recollects well the place in which he has been alarmed or injured, for he often behaves better at a new home than his former one.

7th. NUMBER. *Intuitive perception of the relations of numbers.*—The number of times anything is repeated, as all animals learn by practising, until well understood, if a horse has attempted as many as three times to do a thing, and failed, he is apt to refuse to try again, if the circumstances are changed or directed to go in a different course he may try it.

8th. ORDER. *System; physical arrangement; a place for things.*—heaven's first law; it is through this faculty that we can rely upon success in managing horses, for when treated systematically they will obey; it is the violation of order that causes their disobedience; rubbing them against the hair makes them angry.

9th. TUNE. *Tone ; sense of melody and musical harmony ; ability to learn tunes and detect chord and discord by ear.*—The sense of melody and harmony in sound, enables them to tell the various sounds of substances.

10th. TIME. *Cognizance and recollection of succession, the lapse of time, dates, how long ago things occurred.*—It is the faculty that recollects the hour of the day to feed, and the hour of the night to sleep, it gives a foreknowledge of wind, rain, and snow.

11th. EVENTUALITY. *Recollection of actions, phenomena, occurrences, what has taken place, circumstantial and historical facts.*—The memory of events, the power of calling to mind those circumstances and incidents, it is the faculty that recollects kindness and injuries.

12th. LANGUAGE. *Power of expressing ideas and feelings, by means of words, attaching meaning to signs, &c. ; verbal memory ; desire and ability to talk.*—The mind wishing to communicate a knowledge of these to other individuals, can accomplish it only by making signs expressive of their existence ; these signs may consist of the peculiar gestures, looks and cries. The colt in approaching a crowd often shows his teeth, and the horse often shows his malice with his mouth, ear, eye, and feet, by pawing and kicking.
senses.

13th. CHEMICALITY.

"Who taught the nations of the field and wood,
To shun the poison and choose their food."—POPE.

Thus may be defined the perception of those chemical qualities of bodies which affect the sense of taste and smell ; and we admit that the senses do perceive, and convey impressions, we shall be obliged to acknowledge that this faculty depends upon an organ of the brain. The horse and mule have this organ very large, they will not eat grass that has been manured by one of their own kind, for a year, unless suffering with hunger, they can always detect good and sweet food of all kinds.

Its locality in man is between the eyes and about the middle of the nose. In the horse, as yet, I cannot exactly locate it.

Pneumatics—"He breathed into his nostrils the breath of life, and man became a living soul."

This organ bears exactly the same relation to the lungs that

alimentiveness does to the stomach. When the lungs are not supplied with air a disagreeable feeling of suffocation is experienced, analogous to the feeling of hunger when alimentiveness is not gratified. The mule has such width to the head that he sees all that is passing, and above the eye, near the temple and ear this width is the organ, as in man, and I have yet to see the mule wind broken. I was long of the opinion that large nostrils were not a sure sign of good wind. Those large in that part of the head are generally also in the chest, and fullness of the breast. This organ is the same in all domestic animals and is shown by this form.

14. COMPARISON.

Perception of analogies, resemblances, differences; ability to compare, illustrate, criticise, classify, generalize, &c.—The horse compares the various animals, but his opinion of the lamb or the kid will not lead him to the lion. Look at a man in his natural dress and walk, but let the man go on his hands and feet, or crawl on the ground, then you will see him want to know, and compare those causes to ascertain the resemblance, and he will act accordingly, as his experience, comparison, and ability to discover through these are unknown. I have often seen men meeting the Indians or Mexicans, and found the horse to refuse the meeting of them because it was Indians or Mexicans, the difference in personage. The smell often appears to be the cause; in going to the camp ground of the enemy, who had left five or ten days, and rain had fallen, he was yet unwilling to go about the place. If all the perceptions below comparison be large, and this organ is large, the animal will possess great power of discrimination, and will be capable of nice distinctions.

Phrenologists say that the dumb do not reason beyond their experience. I differ with them here, as I have just shown, in his various actions, in his pitching the man over his head, thus he falls, rares, falls back on him, runs against a tree or fence to knock him off, or falls down, rolls over and will not get up. This he has not learned in the field, but acts according to circumstances; and it is true in his obedience, for when kindly taught, he continues the good behaviour; but if you change or vary the causes, he is quick to discover why, which often is the cause of many persons being injured from the saddle.

15. CASUALITY.

“Observe how system into system runs.”—POPE.

Cognizance of the relations of cause and effect ; ability to apply them, or to adopt means to ends ; power of reasoning, drawing inferences from premises, discovering first principles.—Casuality is the preception of dependence. Everything in existence is more or less intimately related to every other thing ; but when the relation of one thing to another is such that it must always precede it, it is said to be its cause. Thus we perceive the dependence of the rivers upon the tributary streams ; the dependence of the streams upon the springs ; of the springs upon the rains ; of the rains upon the clouds ; of the clouds upon evaporation ; of evaporation upon heat ; of heat upon the laws of reflection.

Organ of Time.—This enables us to perceive the dependence of events upon time ; thus the falling of rain must happen prior to the overflow of the springs, and the swelling of the streams afterwards. The horse, hog, and other animals, will often change their places, if the weather is severe, and causes them to suffer.

The function of this faculty is to compare all our preceptions together, to perceive their resemblances and differences, and the classification to which they belong. It harmonizes all our perceptions, and perceives the agreement among them. If a strange animal of any kind, unnatural to the horse, is present, he examines with his eye, nose, and ears to learn its kind, whether a sheep, or wild and destructive. As soon as he sees its form, size, color, and discovers its innocence, he approaches it, and acts accordingly ; if, on the other hand, it be a panther, he remains on the cautious ground.

SPECIES I—*Domestic and Social Propensities.*

1. *Amativeness*—Reciprocal attachment, and love of the sex.

2. *Philoprogenitiveness*—Parental affection and tenderness, love of offspring. The horse is as fond of the colt as a mother, and will fight to defend it, and often show more regard for it than a father for his child.

3. *Adhesiveness*—Susceptibility of attachment to associates, fondness for society, inclination to love and be loved. This faculty causes the horse to experience the greatest delight in a return of affections. The horse sometimes on forming an acquaintance rejects it, and continues so to do,

but on the first smell he merely squeals, and does not kick or paw. The acquaintance when formed is forever fondly received, and continues for life. This is the cause of beasts going in droves.

4. *Inhabitiveness*—Love of home and country, desire to locate, and remain in one place, attachment to the place in which he once lived. The horse has often been known to forsake his new home and travel a great distance through forests, and over mountains, and to swim rivers, to reach his native home.

5. *Concentrativeness*—Unity and continuity of thought and feeling; power of entire and concentrated application to one thing. The person of mental concentration and continuity. This faculty causes the mind to dwell on any given subject until they have thoroughly acted upon it, and presented the result. The horse when he sees, smells, or hears any object, his mind is hard to draw from it, that make his fears, if forced great and dangerous, when he sees it, hears it, on its touching him, or it may be from any other impression on the mind, its color, or form, as the circumstances may be, he rears or jumps. He keeps in mind for a long time the abuse, or other circumstances, and soon brings to mind the various evils or scares. In many instances the young become confused by various things at the same time, as the gear, the rattle of the wagon, the noise of the men and many other causes.

5. *Vitateness*—Love of life, as such, unwillingness to die. This is shown by the horse, at seeing one lying in the road, or the blood, or see them sick often go to man for aid, expressing their pains by groans and sighs. Cows bawl much over the dead.

7. *Combativeness*—Feeling of resistance, defence, oppositions, boldness, willingness to encounter; courage, resentment, spirit. Propensity to defend, resist and oppose. It is this faculty which makes the horse useful in the wagon, plough, and for all the useful purposes of life, it is necessary to self-preservation, it gives love for parade. The wild horses in droves shows the line of battle, with the officers in front of the danger.

8. *Destructiveness*—Executiveness; indignation; force; severity; sternness; a destroying, pain-causing disposition. Propensity to destroy, exterminate, and inflict pain. The horse that has this large is inclined to kick, rear, and fall back. When running away he will aim to run against some object, to knock off his rider, or the plough or wagon or post,

to free himself from it; sometimes he will aim to leap off of a bank to destroy it and himself. When tired he will sit or lie down.

9. *Alimentiveness*—Appetite for sustenance, desire for nutrition. This faculty is a relish for food. I do not agree with the popular idea as to drink; thirst is another organ. Horses seldom injure themselves by eating in the field of plenty, but when forced to exercise it produces colic, founder, &c.

10. *Acquisitiveness*—Love of acquiring and possessing property as such; desire to save and lay up, innate feeling of mine and thine, of a right to possess and dispose of things. The horse will fight man or beast for food he has in his possession, but will not fight for that which man has. The horse has no power of preserving the food as the squirrel or bear.

11. *Secretiveness*—To hide or conceal himself from his enemy. Many horses on the approach of any one pretend as if they would, but do not. Some have learned to hop, as if lame in one of their legs.

II. *Moral, Religious, and Humane Propensities.*

1. *Cautiousness*—Carefulness; provision against danger. This is larger in the horse than in the man. He on the approach of any body, or any thing uncommon, uses caution, which is not neglected on the approach of all to him; that which is new is closely examined. On his lying down he looks around, smells the place, and one of them is frequently watching while the rest are sleeping or eating.

2. *Approbativeness*—Sense of honor, regard for character; ambition; love of popularity, fame, distinction, &c. The dog on meeting his friend shows this. The horse will show it more often when his master is kind to him. When the food has come to him he is then most playful.

3. *Benevolence*—Kindness and friendship. "As you would that others should do unto you do ye even so to them." The best proof of this is to show it to friends and foes. I learned a horse, so that when his master was pulled off by another horse he was leading, his foot fastened in the stirrup, to reach round his head, unfasten the girth, and let the saddle fall to the rider. Dr. Comb informs us, that horses have this organ, and says, if they want it they will kick and bite.

4. *Constructiveness*—The bee, the beaver, the swallow, and others, construct their dens and nests. The horse uses his mouth to open the doors or gates; to pull down bars or fences. The cows use their horns to open doors, gates, &c. Dr. Comb informs us, that the dog, horse, and elephant most nearly approach man.

5. *Imitation*—Disposition and ability to take pattern after, imitate. Thus you see the horse imitate the signs of friendship or of fight, and one learns to open the gate sooner than another; by this they learn to dance and other great performances.

6. *Conscientiousness*—Innate feeling of duty, accountability, justice, and right; moral principle; and love of truth. The horse will always warn the enemy of his intention to fight. If anything suddenly hurts him he is then compelled to begin his fight. He is never known, when on guard while his friends sleep, to go off without warning them of the approach of danger or an enemy.* The commander on a retreat is always in the rear, to guard the young and the cripples. He is careful in forming for battle to guard the young. He is conscious of his obligation to his master for his food. But many horses and cattle, in new countries, are often abused by dodging them, and compelling them to stay in mud and stick until their legs get sore, and until they forsake their unkind masters, and go wild, and hide in low and bushy bottoms.

7. *Ideality*—Imagination, last fancy, love of perfection and the beautiful in nature.

8. *Marvelousness*—Belief in the supernatural. It is this which causes the horse to fear stumps and other undefined objects, but when he gets up to them and examines them, he is no more afraid.

9. *Veneration*—The feeling of worship for a Supreme Being; respect for religion and things sacred, and for superiors. The young horse will not follow the young when the old ones are about, as young colts in a lot will remain quiet with old ones. I do not know how they worship, but they submit to their superiors in age.

10. *Self-Esteem*—Self-respect high tone, bold feeling, knowledge of his own power. It is this that causes the horse that is in the lead to struggle to keep ahead of his company with all his power.

11. *Firmness*—Decision, stability, fixedness of character.

*This remark is applicable to the wild horse of the desert.

Acting along with combativeness produces determined bravery, and he would adopt the plan which appeared to him most promising, and steadily pursue it to the end. This prompts the horse to return to his native land, through the forest, leaping fences, and swimming rivers. A horse thus constituted, if mistreated, will refuse to obey, and always refuse to submit or go along.

12. *Hope*—Anticipation; expectation of future happiness, success, &c. This is one of the natural traits of the horse which causes him to submit to his master's will, and stand tied to a post by a bridle for a day, even when suffering for food and water. It gives him the patience and mildness of a lamb. Every propensity is dependant upon the intellect, but the higher propensities are peculiarly dependant upon the higher intellectual faculties. I cannot conceive how this organ can act unless assisted by causality, as it is only by means of causality that we look forward to the future.

13. *Mirthfulness or Wit*—Intuitive perception of the joking, fun-making, ridiculing disposition and ability. The horse when young is as playful as a child. The mule, the bear and the puppy all play, but generally leave off these pleasures as they grow older.

In conclusion I have shown that the senses of sight, smell hearing and taste are more perfect than in the man, the sense of feeling equally as good, and serves his use as well. The organs of order and tune, and all other senses as good. The decision is most perfect when the senses have examined the matter. Thus we see one with imitation will give tone to voice and action equal to the author of the voice or emotion. Man's superiority of power is his hands; he can execute what his mind conceives; place his works and ways far above the works of the animal kingdom united. The moral qualities of the horse causes him to feel the emotions of grief; he sighs and mourns after his absent friends; he enjoys their company in his plays and amusements.

COMBE'S CONSTITUTION.

General view of the Constitution of Animal Nature and its Relations of External Objects.

In surveying the external world, we discover that every creature and every physical object has received a definite constitution and been placed in certain relations to the other objects. The natural evidence of a Deity and his attributes is drawn from contemplating these arrangements. Intelligence, wisdom, benevolence, and power characterize the works of creation; and the human mind ascends by a chain of correct and rigid induction to a great First cause, in whom these qualities must reside. But hitherto this great truth has rather excited a barren though sublime admiration, than led to beneficial practical results.

Man obviously stands pre-eminent among sublunary objects, and is distinguished by remarkable endowments, above all other terrestrial beings. Nevertheless no creature presents such anomalous appearance as man. Viewed in one aspect he almost resembles a demon; in another he still bears the impress of the image of God. Seen in his crimes, his wars, and his devastations, he might be mistaken for an incarnation of an evil spirit; contemplated in his schemes of charity, his discoveries in science, and his vast combinations for the benefit of his race, he seems a bright intelligence from Heaven. The lower animals exhibit a more simple and regulated constitution. The lion is bold and ferocious, but he is regularly so, and, besides, is placed in circumstances suited to his nature, in which at once scope is given, and limits are set, to the gratification of his instincts. The sheep, on the other hand, is mild, feeble and inoffensive; but its external condition also is suited to its constitution, and it apparently lives and flourishes in as great enjoyment as the lion. The same remark applies to all the inferior creatures; and the idea which I wish particularly to convey is, that their bodily organs, faculties, instincts, and external circumstances, forms part of a system in which adaptation and harmony are discoverable; and that the enjoyment of the animals depends on the adaptation of their constitution to their external condition.

If we saw the lion one day tearing in pieces every animal

that crossed his path, and the next oppressed with remorse for the death of his victims, or compassionately healing those he had mangled, we should exclaim, what an inconsistent creature ! and conclude that he could not by any possibility be happy, owing to this opposition among the principles of his nature. In short, we should be strikingly convinced that two conditions are essential to enjoyment ; first, that the different instincts of an animal must be in harmony with each other ; and secondly, that its whole constitution must be in accordance with its external condition.

When, keeping those principles in view, we direct our attention to Man, very formidable anomalies present themselves. The most opposite instincts or impulses exist in his mind : actuated by combativeness, destructiveness, acquisitiveness, and self-esteem, the moral sentiments being in abeyance, he is almost a fiend ; on the contrary, when inspired by benevolence, veneration, hope, conscientiousness, ideality, and intellect, the benignity, serenity, and splendour of a highly elevated nature beam from his countenance, and radiate from his eye. He is then lovely, noble and gigantically great. But how shall these conflicting tendencies be reconciled, and how can external circumstances be devised that shall accord with such heterogeneous elements ? Here again a conviction of the power and goodness of the Deity comes to our assistance. Man is obviously an essential and most important part of the present system of creation ; and, without doubting of his future destinies, we ought not, so long as our knowledge of his nature is incomplete, to consider his condition here as inexplicable. The nature of man has hitherto, to all philosophical purposes, been unknown, and both the designs of the Creator and the situation of man have been judged of ignorantly and rashly. The skeptic has advanced arguments against religion, and crafty deceivers have, in all ages, founded systems of superstition, on the disorder and inconsistency which are too readily admitted to be inseparable attributes of human existence on earth. But I venture to hope that man will yet be found in harmony with himself and with the condition in which he is placed.

I am aware that some individuals, whose piety is entitled to respect, conceive, that as the great revolutions of human society, as well as all events in the lives of individuals, take place under the guidance of the Deity, it is presumptuous, if not impious to endeavor to scan their causes and effects. But as the Creator has bestowed faculties on man, it is presumable that he governs him in accordance with them, and their con-

stitution implies that he should investigate creation. The young swallow, when it migrates on the approach of the first winter of its life, is impelled by an instinct implanted by the Deity, and it can neither know the causes that prompt it to fly, nor the end to be attained by its flight. But its mental constitution is wisely adapted to this condition; for it has no powers stimulating it to reflect on itself and external objects, and to inquire whence came its desires, or to what object they tend.

Dr. Combe states that the young swallow when it migrates on the approach of the first winter of its life, is impelled by instinct implanted by the Deity, that it can neither know the causes that prompt it to fly nor the end to be attained by its flight. Dr. C. informs us that all our reasoning depends on our feelings than on our perceptions and reflections. Let us see how this will apply to the subject under consideration. Prompted by hunger, thirst, smell, motion, and air, the gratification of the desires to the natural wants of life; without these desires it would not exist long. If the bird had lost its sight its cautiousness would prompt its consciousness that if it flew forward it would come in contact with tree or hill, and its firmness would then prompt it to fly upward to escape from harm. Now take from it one, or two or more of its five senses, and what will it do for the want of them, and where is its instinct to direct its welfare? As I have before alluded, motives and action depends on its five senses, and perception and reflection.

By those principles it protects itself, independent of those principles I know of no one than could take care of it in life, great or small. All action must be governed by principles to direct its action. All science has some corrections to indicate its meaning. The basis of all language has letters as medium, by which it is taught figures, we learn to calculate. The blind man uses raised figures and letters. Dumb men, by proper signs and signals, holds intellectual conversation with his fellow-men.

If you take away from him sight and hearing, he is no longer conversant with his fellow-man.

Locality gives the desire to travel, and elementiveness prompts the desire. The language of all creation may be one of which as parents tell it, and the sharp eye sees the food and the nose smells it, and insects in the air and streams of water. The motives of it travelling south may be prompted from a motive to go with the natural current of the air to

a warmer clime, that blows to the south, as they may travel the easier or they may delight in the pleasant breeze so much as to fly and meet it, and enjoy the pleasant air which seems pleasant to all. Many birds and beasts enjoy the breath of the natural elements in water, and in spring the warm sun that aids life, as it is natural for creation to enjoy pleasant elements of life. He says that, for it has now powers stimulating it to reflect on itself and external objects. In the first place I reply that perception preserves all objects. The moral faculties is the stimulant for imitation, and learns all young to pattern after the old, of which he admits in common birds as well as in the mocking birds, to be more perfect than any family of man to imitate all his fellow men. I will say the bird sees the gnat it wants to eat, hunger prompts it to fly, supplying its wants by catching the gnats, the end accomplished, is support of life by eating the insects.

In elevating our moral nature, we must obey God and make more happy the beast. We are commanded to live in peace with them, as was in in Paraaise named by Adam, and Noah in the Ark, and it is written that the time shall come, when all the families shall live in peace with one another; and our cruelty to them is often the cause of our being crippled and killed by them; and our own misery and the suffering of the poor beast of our comforts.

“Because the creature itself also shall be delivered from the bondage of corruption into the glorious liberty of the children of God.”—*Romans 8 c. 21 v.*

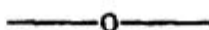
“For we know that the whole creation groweth and teavelleth in pain together unto sorrow.”—*Romans 8 c, 21 v.*

It is my great and earnest desire for man to be merciful to the beast.

NATURAL LAWS OF CREATION,

AND

A PHILOSOPHICAL CATECHISM.



Generalities.

What is the meaning of the word Philosopher ?

It signifies Lover of Wisdom.

And what is understood by Wisdom ?

Wisdom consists in the knowledge and in the application of Truth.

Who then is truly a philosopher ?

He who not only loves, but who applies truth universally. The second part is as essential to the character of a philosopher, as is the practice of morality to that of a christian.

What is the aim of philosophy ?

To know objects and phenomena, and to show the possibility of making practical application of the knowledge acquired.

Then there must be many kinds of philosophers ?

As many as there are species of knowledge, or subjects that can occupy attention. One may be a philosopher, and study entire nature, or a particular district of her domain ; as animals, plants, minerals, man generally, or his physical, moral and intellecture parts in particular.

The horse is a philosopher on many subjects, in applying his senses to all objects that may surround him so far as he is interested.

1st. In having their sentinels, signs, and signals, in forming in battle array, the strong command and the weak obey.

2d. In retreating, to have the wind in their nose, that they may not approach a hidden enemy, with the commander in the rear protecting the young.

3d. He is an astronomer in regard to the change of weather, thus he retreats to the grove for protection from the wind, rain, and snow.

4th. He is a mineralogist, in selecting water for drink in sickness and health.

5th. He is a botanist, in selecting the different kinds of plants and grasses for his food and medicine.

6th. He is a mechanic, in slipping his bridle, opening gates, and doors, and in pulling down fences.

7th. He is a reasoner, because he selects certain grounds and positions, in throwing or dislodging his rider, also in discerning his friend and foe.

8th. He is a philosopher in deceiving his pursuer, by walking along before him as if he would stop, when fixed to suit his plan, he suddenly wheels and runs to the point of exit.

9th. He is a philosopher in discovering locality, courses, latitude and longitude; by this he readily takes his course for home.

10th. He is conscious of his blindness and danger, and cautiously listens to the roaring of water, and all that surrounds him, and feeling his way, and if he gets out of his road he will soon feel to turn, and regain it. On the approach of a storm or tempest, he will sigh, moan, and groan, as if in great uneasiness.

11th. We here see the Feeling Perceptions, Reflection, and Spiritualism, in this regularity, all minds receive the things of the world.

Lastly. To satisfy his appetite at night when his master sleeps, he opens the gate and fence, and goes in the field to supply his wants, thus accomplishing his will contrary to the design of man, that great monopolist of all reasoning.

How may laws be divided?

They may be classed under two heads—the Natural, and the Artificial. The first are imposed by the Creator, the second by individual governors.

What is the signification of the word nature?

Nature is a word to which three distinct meanings are attached:—

1st. It designates the universe,—the heavens, the earth. All that meets sense.

2d. It expresses essence—that which characterizes or constitutes a class of beings, or individuality. In this sense we say: every being acts according to its nature;—man in his nature is not an angel; we cannot change the nature of things; we cannot, for example, gather figs of thistles, nor grapes of thorns.

3d. It is used to signify the First Cause personified, and

may then be considered as synonymous with God, or Creator.

What are the characteristics of natural laws, or of laws established by the Creator ?

Natural laws are inherent in beings, often evident, always demonstrable, universal, invariable, harmonious, and common in animals.

How is the first character of natural laws, their inherence, explained ?

The laws of nature exist by creation, and enter as a part into the constitution of beings. The inherence of natural laws is therefore apparent.

How is the second characteristic of natural laws, their regularity, to be apprehended ?

The regularity of phenomena is so generally evident as scarcely to require demonstration. Every one knows that without support his body falls, and that water cools the body.

Are all inanimate, and all living beings subject to natural laws ?

All beings whatsoever have a determinate nature ; all phenomena appear in conformity with fixed and inviolable laws. Any opinion to the contrary is fraught with danger to mankind and creatures.

In what does the misery of creatures consist ?

In the non-satisfaction of his faculties.

Then the causes of the misery of creatures are different, are they not ?

They vary according to the faculty or faculties which are active, and which are not satisfied.

What is the principal cause of the unhappiness of creatures ?

Ignorance and transgression of the natural law.

It appears, therefore, that to know and to practise the natural law is extremely important ?

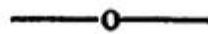
As the evil consists in its transgression, and good in its accomplishment, and as its infringement is the principal cause of man's unhappiness, the natural law ought to be made a principal study with every individual ; it should be learned by heart, and its precepts never lost sight of in the business of life.

How may the natural law of creatures be subdivided.

Into three kinds, after the threefold nature of his functions, viz : Vegetative, intellectual, and Moral ; and Motion is life.

Do these kinds of laws exert a mutual influence ?

They do, and it is of much importance not to confound the fundamental faculties in which they inhere, with the products of the mutual influence of those faculties, nor the existence of three kinds of laws with their reciprocal relations.



SECTION I.

Of the Vegetative Laws of Man and Creatures.

What natural laws of man and creatures are Vegetative ?

Those which concern the preservation of his body are so entitled.

How may these laws be divided ?

Into two orders, having for their objects respectively,

1st. The preservation of the individual ;

2d. The preservation of the species.

What are the most important of the natural laws that relate to the preservation of individuals ?

1st. A good innate constitution ;

2d. The laws of dietetics, which include temperature, light, air, food, cleanliness, exercise, and repose.

Is not a perfect attention to the laws of dietetics indispensable to health ?

Yes ; a certain quantity of caloric is necessary to life, but it injures the bodily health in too great abundance or too great scarcity.

Cold engenders many complaints, not only among the poor, but also among the rich. The impossibility of guarding against sudden changes of temperature, and the imprudence with which all expose themselves to these, are causes of innumerable diseases. The quality of the air man breathes also influences his bodily state. Carbonic acid gas suppresses the vital functions, hydrogen retards, and oxygen accelerates them ; marsh miasmata produce diseases, &c. Air free from all putrid or other exhalations is necessary to enable man to exercise his various attributes with energy.

How may the dietetic laws that relate to Alimentation be considered ?

Either as the quality or quantity of alimentary matter is concerned.

Does the quality of animal's food deserve attention.

It should be accommodated to age, temperament, climate,

and season; and should vary with the prevailing weather, and the state of health of the individual. Whatever is easily digested is wholesome, whatever is not is pernicious. Many enactments of ancient legislators show their sense of the propriety of regulating the quality of aliment. Religious law-givers seem also to have had the same end in view, when they pronounced certain others to be unclean. Pork in the warm countries of the East is unwholesome, and the Jews and Mahometans are forbidden by a religious commandment to eat of it.

Does the general law in regard to the salubrity of aliments vary in different countries?

In every climate the general law is the same: such food is universally to be used as may be digested with ease. But aliment varies in kind in every different country; and as food, by another natural law, must always harmonise with the particular circumstances of existence, with age temperament, climate, &c. such things cannot be proper, in lands where the excessive heat and light of the sun stimulate the vital functions greatly, as are wholesome and even necessary in regions where frosts, and frost, and darkness, cramp the energies of animals.

There is nothing then clean or unclean in itself?

Nothing. Everything, however, may deserve either title by its employment in general or particular cases.

Are the dietetics of the Jews of Palestine, and of the Egyptians, adapted to the nations of the north?

By no means. To prescribe the same course of diet to the inhabitants of every country of the globe, would be no less absurd than to command the same material, and the same form, for the garments of the Esquimaux, European, and native of Senegal.

How is the natural law, having reference to quantity of food, entitled?

Sobriety or Temperance.

Is this law of much importance?

It exerts a powerful influence upon the well-being of individuals. The sober man digests easily, his body is properly nourished, and he is ever in a condition to perform his labors.

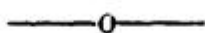
What crimes are committed against society?

Gluttony and Drunkenness.

What evils attend on the first of these?

A long train of ills wait upon gluttony. It injures the health, and weakens the digestive powers; or it brings on

obesity, unfits the body for its duties, obscures the powers of the mind, and occasions every species of inconvenience.



SECTION II.

Of the Intellectual Laws of Man and Animal.

What is the essence of Intelligence, or Understanding?

It is to know. The intellect alone acquires knowledge, of whatever kind it be. Animals acquire knowledge by practice in work and riding, to go and return, and to know friends and foes.

In what does Intelligence consist—or, what is Intelligence?

Intelligence is a word which, at one time designates a personified principle which knows; at another, no more than an attribute of a principle—the faculty of knowing; sometimes also the name is used to signify the functions collectively which have place with consciousness.

In what are philosophers agreed, in their discussions upon intelligence, and in what do they differ?

All agree as to the effect of Intellect; for all assign to it every species of knowledge,—to know is its nature; but differences occur, as to what it is that knows, as to the objects known, the conditions necessary to knowledge, and the various degrees of certainty of our knowledge.

What opinion is the most generally entertained as to that which knows?

The greatest number of philosophers speak of, and admit, an incorporeal something, inhabiting the animal's body, which knows. Others, however, consider knowledge as a function or product of certain organic structures.

How are these two classes of philosopher entitled?

The partizans of the first opinion are called Spiritualists, those of the second, Materialists.

What was the literal meaning of the word among the Greeks and Romans, which corresponds with Spirit or Soul among the moderns?

Air, or breath.

And by what name is the doctrine of the incorporeal something of man's constitution designated?

It is termed Psychology, from the Greck—soul, and discourse or doctrine.

What are the ideas most generally entertained concerning this incorporeal part of man?

That it inhabits our mortal body, by the medium or assistance of which its operations are variously manifested, and from which it is separated at death, to change its habitation.

By what name have some modern French philosophers entitled the *vis*, or power which knows and the result of its activity or knowledge?

They have called the power which knows, Sensibility without paying further attention to its nature, its actual state, or its destiny; and to the product of sensibility, that is, knowledge, they have given the general title, Sensation.

Can we, by reasoning, arrive at the conclusions on the nature of that which knows, on its manner of acting, or on its final destination?

These are purely subjects of religious belief, and history shows that opinions, the most contradictory and unlikely, have been promulgated and received in regard to them.

What conclusion is to be drawn from this fact?

That every individual is to have full permission to believe that which seems to him good and proper, provided neither individual nor general happiness be compromised.

Is reason a fundamental power of mind?

No, this term indicates the functions of Comparison and Casuality severally or in combination.

What is the aim of reason?

Reason is given to direct the functions of all the other special powers of the mind, and to bring them into harmony; without being guided by reason, every faculty is liable to errors.

Since reason is essential in preventing the errors of the other faculties, is it free from erring?

Reason acts accordiag to determinate principles, but it does not furnish the objects on which it operates, hence it will err each time when the premises or objects of its activity are not truly furnished. Gold may be silvered by gilt.

Since many mistakes have thus been made in regard to the powers of the mind, how can we, by reasoning, arrive at a knowledge of its special faculties.

A faculty will, by reason, be recognized as special.

1st. When it exists in one species of animal and not in another.

2d. When its manifestations are not in proportion to those

of the other faculties, neither in the different sexes nor in the same individual.

3d. When its manifestations may be singly healthy or singly diseased.

4th. When its manifestations do not appear nor disappear simultaneously with those of the other powers.

5th. When it can alone or singly repose.

6th. When it is transmitted in a distinct manner from parents to offspring.

The same mode of proof applies to the special affective, as well as the special intellectual faculties. Observation and induction must lead to the knowledge of both.

How is the existence of any special faculty whatever to be proved by observation?

By the recognition of a relation between special manifestation and particular organic apparatus.

What are the affective faculties of men and animals?

† Desire of Life.

* Desire of Meat and Drink.

1. Sense of Destroying.

2. Sense of Amativeness.

3. Sense of Parental Love, or Love of Offspring.

4. Sense of Attachment.

5. Sense of Habituation.

6. Sense of Courage.

7. Sense of Secresy.

8. Sense of Acquiring or Collecting.

9. Sense of Constructing.

10. Sense of Cautiousness.

11. Sense of Approbation and Notoriety.

12. Sense of Self-esteem.

13. Sense of Benevolence.

14. Sense of Reverence.

15. Sense of Firmness and Perseverance.

16. Sense of Conscientiousness.

17. Sense of Hope.

18. Sense of Marvellousness.

19. Sense of the Ideal and Perfect.

20. Sense of Mirth and Humor.

21. Sense of Imitation.

What are the intellectual faculties of man and animal?

1. Five external Senses which convey to him peculiar impressions of the external world.

2. A faculty which personifies these impressions, and presents them as separate from the organs of external sense.

This faculty seems to procure him notions of individual existence.

3. Particular faculties which know the Physical Qualities of objects, as Configuration, Size, Weight, and Color.

4. A particular faculty which knows what passes in objects and their qualities, that is, which cognizes the phenomenal world. The same faculty seems also to turn into knowledge all sensations felt in the body; as pain, fatigue, the necessity of different evacuations, cold, heat, and lastly, the activity of all the affective powers.

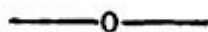
5. Particular faculties which conceive notions of the Localities of objects, of Time or duration, whether of objects, or of phenomena and their succession; of Melody of Number, whether of objects, qualities, phenomena, or tones; of Order, whether in objects in physical qualities, in phenomena, in localities, in succession, or in number.

6. A particular faculty which cognizes Analogy or Difference, Similitude or Dissimilitude, and Identity, and establishes harmony; and another which appreciates the causes of objects and of phenomena.

7. A particular faculty which knows and presides over the signs of artificial language.

What is understood by the Passions, and by the Affections?

These words denote modes of action of the primary faculties. Passion expresses the highest degree of their activity. Affection the mere general mode of their being affected.



SECTION III.

Of the Moral Luws.

Is the horse naturally a moral being?—that is, a being who, by his own nature, views his actions in relation to duty and justice?

Yes: there is in his constitution an inherent sentiment, entitled Moral Conscience, which produces such an effect.

Are the moral precepts of all creatures and animals alike?

No; for the act which is considered just in one country, is often looked on as unjust in another.

What is the cause of this diversity of decision?

The sentiment of conscientiousness does not determine that which is just or unjust, it only feels the necessity of being just. The majority of mankind take for granted whatever they are told is right; and assume as just, the precepts to which they have been accustomed from infancy. Among the few who think, Intellect determines Justice; but the conclusions are still influenced by the general mental frame.

How may conscience be divided?

Into Absolute and Individual. The first is Conscience as it ought to be for all men and animals; the second, as its name implies, is the Conscience of individuals.

In what does the Absolute Conscience of creatures and animals consist?

In the sentiment of conscientiousness combined with the whole of the faculties peculiar to creatures and animals, those common to the human kind and animals being held in subjection.

In what does Individual Conscience consist?

It results from the sentiment of conscientiousness combined with the other faculties of individuals. He, therefore, who possesses the superior sentiments in great activity, will esteem these notions and actions as unjust, which another, whose inferior feelings are strong, and superior weak, would look upon as just. Intellect, it appears, is corrupted or swayed by the affective powers, and admits as just whatever these recognise as agreeable.

Can we trust to the individual Conscience of mankind and animals?

No; it is impossible. Many feel very slightly the desire and necessity of being just, and seldom or never think of examining their actions with relation to moral rectitude. Besides, people are frequently misled in their moral judgments by the influence of other feelings; and many things which the standard of Absolute Conscience pronounces unjust, pass for just when estimated by individual manners of judging.

Ought not the moral laws therefore to be studied, determined, and proposed as obligatory?

Certainly; Conscience should be Positive.

Is there any difference between Positive and Absolute Conscience?

There ought to be none. In the world, however, Positive Conscience, or the Law, has most commonly been a product of the Individual Consciences of rulers.

Has the Natural Moral Law, or Absolute Conscience, any distinguishing character ?

It has all those of the natural laws generally.

Have men any right to make moral laws ?

They have none, any more than to fabricate laws to regulate their vegetative and intellectual functions. They cannot change the law of propagation, nor of alimentation, nor of any other functional operation ; they can form no conception of an object without dimensions and figure ; they cannot conceive an effect without a cause ; neither can they love pain, nor approve internally of that they perceive to be bad or immoral.

Who made the moral laws of men and animals ?

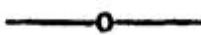
The same Great Cause that traced the laws of man's physical and intellectual parts also instituted laws for the regulation of his moral nature—God, the Author of the universe.

How does the Creator make known or reveal his laws ?

To inform man and creatures of his enactments, God has endowed him with understanding, to observe and to learn those that implicate his physical and intellectual natures ; and has implanted in his interior, sentiments which make him feel the moral laws.

Is there not another source whence knowledge of Moral Laws is derived ?

Yes, Revelation ; that is, knowledge communicated by God to man in a supernatural manner, when they had now learned the law within themselves.



SECTION IV.

Of Mortality.

In what does a Moral doctrine consist ?

It is a doctrine of rights and of duties, and of those things which are, and of those things which are not, to be done.

What is to be understood by moral philosophy ?

The term *moral* is sometimes used in opposition to *physical*, also styled *natural* ; and the moral philosophy means the doctrine of the Mind, but the same term also signifies the

higher powers of Man in opposition to his brute nature, and in that sense, moral philosophy is the same as Ethics, the doctrine of rights and of duties, or of the moral precepts which admit of proof by reasoning, and which bear the character of conviction.

As to rights—has man any right over God?

He has none.

What duties has man and animals towards their Maker?

To obey His will in all things.

What rights has man over the beings of creation generally?

Man's superior endowment in faculties elevates him far above all else that lives, and he has a natural title to profit by his situation. Such a law is universal; it extends throughout the whole chain of created things.

Can we then with propriety say that all was made solely for man?

It is ill-directed pride alone, that has promoted the conception of the utterance of such an assertion. Every creature advantages itself at the expense of others; and if man turn the whole to his profit, he only follows the common course of nature. This, however, is far from showing that it was made solely for him. Geology indeed proves, that many beings inhabited the earth before the human kind was called into existence.

Has man rights only over those creatures which, with himself, enjoy existence?

No; he has duties also towards them. Neither the physical nor the purely animal nature knows aught of duty; but to these, man unites a third, which causes him to view his actions in relation to mortality. An essential faculty of the moral man and animal is Benevolence, and this forbids him to torment sentient beings for his pleasure. All cruelty to animals is, therefore interdicted by Natural Morality.

Is there a natural law, that allows man to kill animals for the sake of their flesh as food?

Many tribes of the lower animals only live by shedding blood. Now the brute portion of his nature leads man to destroy, just as it does the inferior creatures. Man's anatomical structure proves also, that he is fitted to live upon flesh; and further, he thrives on such food. Still, his benevolence ought to restrain him from the commission of every act of cruelty, either against the lower animals or his fellow men.

What Virtues may be entitled individual?

Every action whose end is development and preservation of the body, the understanding, and the moral character of the Individual.

Wherein consists the difference between Individual Virtues and those Virtues which regard Families, Nations, and the whole Human and Animal kind?

It lies in the employment that is made of the corporeal, affective, and intellectual power, to further the happiness of ourselves, of our families, or of mankind in general.

Which of these Virtues is the most excellent and ennobling?

That which interests the whole human and animal kind is eminently superior to all the rest. True it is, indeed, that this is generally lost sight of altogether. In the appreciation of the Virtues, the scale of their worths is commonly reversed. Most men and animals think first of themselves, then of their families, then of their country, and seldom expend a thought upon humanity at large. There are even few who recognize the happiness of the species as the aim of man and creatures existence, and the subordination of all else to this. Yet nature shows most evidently that she does all for the species: she universally sacrifices individuals to its preservation. Moreover, desire of self-preservation inheres in all animals, love of family and of country in a smaller number, but love of the entire species is a distinguishing character of man in his best estate.

Is it to be expected that man will practise the virtue of universal love?

No; hitherto the happiness of countries has been sacrificed to that of families and individuals; but general philanthropy is commonly decried and scouted as an aberration of the understanding; and this, too, in despite of the express command of Christianity.

[From the *American Phrenological Journal*.]

WHY IS NOT MAN IMMORTAL, AND BEAST MORTAL?

“Beasts are forms of affections: evil and useless beasts are evil affections, but gentle and useful beasts are good affections. Man also partakes of the same affections. How often do we hear it said that such a one is as gentle as a lamb or as wild as a dove; another may be as fierce as a tiger, or wolf; another as cunning as a fox, or like a snake in the grass; and yet another may be as sharp-sighted as an eagle, etc., etc.

Beasts have all the faculties which they are capable of receiving. Those which they have may be strengthened, but no new ones can be developed. “They are at once born into the sciences corresponding to the love of their life.” This instinct is implanted in them in a greater or less degree, according to their organization, and the use for which they were created. They can never use any other language than that which they at first use; they cannot think from the understanding, therefore they cannot reason; they are not capable of self-improvement. Each kind of animal can perform its own use, and not that of another. Instinct teaches them how to build their nest, what food is proper for them, and how to fly from their enemies. These things, they can do in the earliest stage of their existence. They were created entirely for the use and service of man.

Beasts have no moral and intellectual faculties by which they can receive divine love and wisdom, therefore they cannot comprehend why they were created, neither can they be elevated above the uses and wants of the body, consequently they cannot be consociated with angels nor conjoined with the divine mind.

Now let us see how it is with man. At his birth he is the most helpless of all created beings; but he has a form or organization by which more can be developed than any other. He very soon begins to show a *desire* for knowing what is going on about him. In the first years of infancy the affections should be cultivated, and regulated or taught. He does

not know what is best, but should be directed. He can never give a reason for what he does ; he acts from impulse ; it is always "because I *want*, or *do not* want to do that." He has many things to learn before the power of reasoning can be developed through his senses.

He next learns things more scientifically, and wishes to know more about the "why" and "wherefore" of things.— During this period only the *natural* mind has been opened ; but a basis has been laid for the opening of the *spiritual* senses to serve as a *plane* for future operations. We next see "the rational principle." He begins to feel a "spirit of liberty," a desire to throw off restraint, and act for himself, to have some perception of spiritual truth, to perceive more clearly the *right* and *wrong* of things, and act from principle. The moral faculties are more fully developed, and by a *right use* of them are gaining strength, in order that he may be enabled to perform well the more active duties of life, when he shall have arrived at manhood. He then begins to obey the truths learned, and to do good because his *understanding* tells him it is right, and thereby becomes a *rational, spiritual* being. He is capable of the higher and more refined enjoyments ; can perceive the beauty and sublimity ; may feel the approbation or reproaches of conscience, according as he has used or preserved the truths he has learned. All this brings him into a state for the opening of a still more interior or *celestial* degree of the mind. He then does good, not only because his understanding tells him it is *right*, but because his *will loves* to obey the laws of God. He then more fully comprehends the purposes of his creation, and the dealings of the Divine Providence with him ; and comes into a state to be consociated with angels, and conjoined with the Lord.

I doubt this premise, and of course question the conclusion built on it. I cannot now give all my reasons. The following anecdote is in point :

Some years since, in the town of New Boston, New Hampshire, there was in a family a woman who was insane, a confirmed maniac. A partition was made by upright slabs secured in the floor of the room (which was the common living room of the family,) and a piece of timber overhead. Here she was constantly confined. A shower coming up, all the members of the family, women as well as men, went out in a field adjoining the house to assist in raking and getting in the

hay. A window was left open, the dog was in the house—I believe, a full, or cross of the shepherd's dog.

The family had been baking, and had thrown a large quantity of coals from the oven into the large fire-place. The people in the field heard the dog barking and howling, and saw him jumping up to the open window, in such apparent distress and want of assistance, that they concluded something was wrong at the house; they accordingly dispatched one of their number to see what the trouble was with the dog. The person came up, and looking in at the window, witnessed the dog's operations,

The mad woman had got out of her pen, and thrown the coals about the room. They set fire to the floor. The dog would get hold of the woman and pull her away from the fire-place; he would then brush the coals to the hearth with his paws, and put out the blaze on the floor, while he was doing this, the woman would get to the fire-place, and scatter the coals again. Again he would pull her away, and then go to work to brush up the coals and put out the fire. But finding that he had more work to accomplish than he could perform, the fire kindling in so many places, he gave notice at the window, and called for assistance. The person entered the house, secured the woman, swept up the coals, put out the fire, and returned to haying.

Now instinct would have taught the dog to make his escape from a burning building; but knowing that the woman was crazy—knowing that she was doing mischief—knowing she would burn the house—and finding that he could not manage the affair, but thinking that the *sane* folks could—calling for their assistance, and giving them notice of the danger, looks very much like what those *wise* folks call reasoning, or would look like it, if it had been done by a human being.

That many animals possess Casuality is clearly evinced by their frequent adaptation of ways and means to end. Call this instinct, if you will—and every exercise of every one of our faculties is instinctive—it is nevertheless an instinctive exercise of the reasoning faculties. They possess Individuality, Form, Size, Weight, Color, Order, Number, Locality, Eventuality, Time, Tune, Language—do they not communicate by action and intonation, and the reasoning faculties and human nature? That is, they observe objects, recollect shape, measure distances, balance their bodies, distinguish ripe fruits and other things by color, know the difference between one

and many, find places, remember facts, keep time. How often do oxen and horses learn to step at the same—sing, as in birds—express their desires by signs and vocal sounds, read human nature and the designs of men in their looks, learn by experience—Comparison and Eventuality—and evince Casuality by adapting means to ends, as in cases like the dog mentioned above! They therefore possess at least a *moiety* of all the intellectual faculties.

That they likewise possess the moral, is evident from the Benevolence of dogs in rescuing the drowning, and suffering swine in the ado they make when one of their members squeal, &c.; and if they do not possess Conscientiousness and sense of guilt—as dogs when caught stealing sheep, &c,—then I read their natural language wrong. And do they not pray for food when hungry, to go with their master, &c.? At least, they evince *dependence*, shown in a recent number to constitute the elemental feeling of veneration and prayer. Hope they evince clearly, and also Firmness, as in fractious horses; and I think I could show their possession of Spirituality. At all events, we *know* they possess all the other moral faculties—weak to be sure, but yet *there*, and the smallest amount suffices for our argument. Since, therefore, they possess the identical moral and intellectual faculties possessed by man, and differ only in their *degrees*—and here men differ from each other—and our argument is not based in degree, but in *possession*, no matter how little—why should not a common destiny await them? In common with Bishop Butler, one of the great philosophico-orthodox authors studied in our most religious colleges, I can see no valid objection against their immortality. What objections to their existing in a future state? They might even be of service there as here. At all events, the Bible often speaks of angels using horses, and *means* something by it.

Yet our question primarily concerns their *possession* of the moral and intellectual faculties, which no analyzing mind can question. The story we recently published of the dog chasing the boy to bite him, but when the boy fell and broke his leg, setting up a cry to procure help; and of the dogs of St. Bernard, who have rescued so many freezing travellers on the Alps, and many like facts, establish our point. To call all this *instinct* is to confess the very point involved, for this instinct is only the natural action of the very faculties in dispute.

(*Extract from a newspaper.*)

A dog and child playing in a yard near the edge of a pond, the child fell down and rolled in—the poor little dog ran around the house to the large dog, and he ran and pulled the child out of the water; the child was seen by the mother to fall and role in the water—she was sitting at the window, upon the second floor, and before she could get to the child, the dog had taken it from the water.

A Dog attending Church.

A Dog that attended church for two years at Clarksville, Tennessee, on the Columbian river, in 1848. I was there and saw the dog, and was informed by gentlemen, (editors in the place) that it was in their columns. The dog came there astray, and took up his board at a good hotel, and watched the back yard; he did not take up with any one, nor did he run about the streets with other dogs, but strictly watched his yard at all times except Sundays, between ten and one o'clock, when he went to church, and was known by the name of Calvin. When the church bell rang he would go into the church and lie down in the pulpit; he visited the church alone and returned alone. On one occasion there was a report out, that there was to be a learned Methodist minister to preach on that day, there being no preaching in the Presbyterian church. He went to the Methodist church and laid down in the pulpit, and waited until they sang and prayed. After he had preached awhile the dog got up and went out and never left his own church again to hear others preach.

Learned Dogs, Hogs, Goats, Circus Horses, Parrots, and the Canary Birds that has caused such numbers to visit them.

It was not until the eighteenth century that the dumb and blind man was learned to read and write. The Bible teaches, that there was a time when there was but one language and one tongue—now many tongues, and yet but one language. When the Lord made covenant with man he did with beast, and taught language and tongue to all his creation.

The Benevolent Horse.

A gentleman had a pair of horses in a field which he was

walking through—one of them came in great haste to his master, and then going in the direction of the place where his mate was fastened in a bridge. He kept going off and coming back to him. He at length went in great haste to his mate and found he was yet in the bridge. He again went to his master and tried to make him understand him by neighing and making an unusual noise. At length the master seeing the horse so uneasy to express his wishes, went with him and found his mate fastened in the bridge—the master went to work, got the horse from the bridge, then the horse went to his master and rubbed his face against his in his way, as much as to say “I am thankful to you for relieving my friend from his distresses.”

“—————True Religion
Is always mild, propitious and humble;
Plays not the tyrant, plants no faith in blood;
Nor bears destruction on her chariot wheels:
But stoops to polish, succor and redress,
And builds her grandeur on the public good.”

THE SYMPATHY AND SAGACITY OF THE COW.

A gentleman passing through a field saw a cow come running in haste towards him, he looked at her, and when near to him she stopped and looked at him and lowed and mourned, then turned and moved in the direction of her calf. The gentleman followed her—she then showed him the calf in the ditch and water, but it was drowned; he got it out on the bank, and she stood mourning over the dead,

Benevolence of a Hog at Vicksburg, Mississippi.

There was a hog in Vicksburg, Mississippi, where a flat boat had sunk loaded with corn, who would dive down and get a ear and feed herself, and when satisfied, would dive down and get it for her pigs and other acquaintances until she satisfied them. There was another case in Madderson county, Kentucky, where a pet hog was allowed to go in and out of the corn crib, and he would take a ear in his mouth and then go and stand over the fence and let it fall, and continue to feed them at different times.

PHRENOLOGY AND PHYSIOGNOMY APPLICABLE TO MAN AND HORSE.

The Principles of Phrenology and Physiognomy are applicable to man and horse. And the disposition of the former cannot be determined with more certainty, than of the latter, by the application of those principles. The educated and practiced eye of the observer will readily detect any peculiarity on the disposition and character of a horse which he has never seen before, and thus enable him to adopt at once that plan of management which will prove most successful.—No one with a knowledge of the difference existing between two horses, would think of treating a tried and docile animal with the bold and determined discipline which would be required in the management of the spirited charger. As in the management of human beings, so with horses, the discipline necessary for one is inappropriate to another. Ignorance of the principles which should govern us in their management has led to the shameful and unnecessary abuse of this noble animal.

If you would render your horse tractible and subservient to your purposes, you must educate him. Of this he is susceptible. You must teach him your will; and then kind treatment will secure his obedience. From his Phrenological developments and indications of Physiognomy, learn first the peculiarities of his disposition, and then address your mode of instructions to those peculiarities. If he is timid, let him understand by your kind and gentle treatment that you do not design to hurt him. Secure his confidence, and then proceed to teach him what you wish him to do. Repeat your lessons by practising him on what you wish him to perform, occasionally encouraging him by patting and caressing him. In this way you render him permanently gentle and tractable. The memory of the horse is remarkable—what he once learns, he never forgets, and hence the importance of the proper plan of treatment in the commencement of his training.

The Indian and Spanish method of *breaking* horses renders them comparatively worthless. They gentle them by *breaking them down*. A young horse under their management is soon old. His constitution is impaired and his voracity destroyed by the cruel treatment, and exhaustion of nervous

energy and muscular power, to which he is subjected in order to subdue him, and that too, generally before he has been matured by age. All harshness and barbarity in the management of this noble animal I protest against. It is wholly unnecessary, and proves that of the two, the master has less sense than his horse. I repeat again, the horse soon learns what he thinks you wish him to do, and he tries to obey you. If you deal harshly with him, by jerking, beating, whipping and spurring, he will play the fool as well as yourself; but if you deal kindly and gently with him, allaying his fears by caresses, as soon as he understands what you wish him to do, he will yield obedience.

Always remember that in training a horse for any purpose he must first know what you wish him to do; for it is impossible that he can know your desire until you have communicated it to him by teaching him.

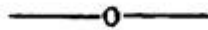
The facility and readiness with which animals, in training, acquire a knowledge of words and signs, is truly astonishing. Some may be taught almost anything, except articulation.—Some horses evince more sagacity and intellect than others, and this difference will always be found to be in accordance with these Phrenological developments, or the difference in the formation of their heads. The ass and mule have been generally proverbial for their stupidity—a most mistaken notion. Just the reverse of this is the truth. Though obstinate, their sagacity is astonishing when circumstances bring it into play.

So much depends upon the form of the head and development of the different organs, that no one, without a knowledge of the subject can pronounce with any degree of certainty upon the qualities and properties of a horse presented for his inspection. The information which I impart to my pupils will enable them promptly to select, among many horses, such as are good feeders and easily fattened—to detect the stumbler—to designate the scarey or vicious horse, and choose such as possess a combination of the best qualities.

The different temperament indicated by the color and texture of the hair, form, and size of the muscles, give diversity of character to the tone and nervous energy of horses. These are subjects worthy of consideration, and one highly important to those who wish to deal on trade in this kind of property.

Horses that have good constitutions, and are remarkable for durability, have lively hair of a deep grey color—such as the blood bay, dark brown, red sorrel, &c. As these are sub-

jects, however, upon which I descant in my oral instructions, and concerning which the reader may obtain information from the next chapter and other sources, I shall not prolong the present chapter by the addition of other remarks connected with these subjects, further than to state the fact, that wherever a striking resemblance is found to exist between man and horse in the general outlines of the face, and expression of countenance, these will be found to exert a corresponding similarity in some one or more traits of character.



TO THE ADMIRERS OF SCIENCE.



GENTLEMEN:—We daily hear of the march of the progress to perfection of many branches of science. Why may we not cultivate the mind of the domestic animals for the usefulness of man? To teach him to ride or work, that we may ride with more safety, and in confidence by our safety, that our ride may be more gratifying and amusing, that our daily labors will not be so perplexing and aggravating. Why shall the Americans suffer by this more than the Arabs and Turks in their countries? History informs us that the horse is never known to kick or bite his master. In America the pages of newspapers are darkened of the many crippled and killed, and many of the useful animals crippled and killed from the want of better knowledge of the proper system to teach them your will. They are always in fear of the whip, and between too opinions—evil is the result. As injustice and cruelty go hand in hand by so many unthinking, unfeeling men that they practice this to the beast, supposing that they have no thought; and I believe that the best horses have more teachable qualities than such beings. I am aware of the persecution I must bear from these assertions, for I well remember the first of my public performances—the slander. I have gone on by degrees as I have improved.

We can hear from the pulpit that some men are worse than the beast; they kill what they will not eat: the lion kills to-day and to-morrow eats: the man kills to-day and repents the next. You will remember that cultivation or habit rules man.

The great bulk of mankind measure the professional ability of individuals solely by their degree of reputation, forgetting Shakspeare's remark, "that a name is very often got without merit, and lost without a fault." A professional gentleman, in a populous country, seems to be the plaything of fortune; his degree of reputation is for the most part totally casual; they that employ him know not his excellence; they that reject him know not his deficiencies. To impose upon the world is to secure your fortune; to tell a truth you did not know before, is to make you run equally sure. How was the exposition of the blood first received? Harvey, its discoverer, was persecuted through life; his enemies in derision styled him the "the circulator."

Gentlemen, how was the still greater discovery of the immortal Jesmer received, Vaccination? Like every other discovery, with ridicule and contempt; not only was he persecuted and oppressed, but lost his practice of medicine of which he had made his living; even religion and the Bible were made engines of attack against him, and were deduced as chief grounds of accusation against the new practice, and they grievously attempt to prove from quotations of the prophetic parts of Scripture, and the witness of the fathers of the church, that vaccination was the real Antichrist. When I first practiced the teaching of the horse I was said to be drunk; by others deranged; others said I had unnatural power, and in some degree as yet fearful of me. How true are the words of the son of Siruch: "after searching the world, he returned, and saw under the sun that there was neither bread to the wise, nor riches to men of understanding, nor favor to men of skill."

But so different from each other are even the greatest Farrier authorities on every subject in medicine, that I do not know a single disease in which you will find any two of them agreeing. Take the subject of Cholic; one will offer as a sure cure. turpentine; another will recommend whiskey and salt, no limits to the prescription, all differing, and none will pay for him if he dies, at 10 or 20 per cent. for insurance. I am of the opinion that it would be as bad a case to insure a well horse with the dose, as the disease for it it is fire to fire, it is fever and dose would cause the same. If false facts, says Lord Bacon, be once on foot, what, though neglect of examination, the countenance of antiquity and the use made of them in discourse, they are scarce ever retracted. "Nothing," says Sir Humphry Davy, "has so checked the progress

of philosophy as the confidence of teaching in delivering dogmas of truths, which it would be presumptuous to question."

We read of learned observers, and gentlemen see there are much greater obstacles in overcoming old errors than in discovering new truths; the mind in the first case being fettered, in the last perfectly free in its progress. To say that any class of opinions shall not be impugned, that these opinions are infallable, and that their authors cannot err; what can be more egregiously absurd and presumptuous; it is fixing bounds to human knowledge, and saying man cannot learn by experience; that they can never be wiser in future than they are to day. The vanity and folly of this is sufficiently evinced by the history of religion and philosophy; great changes have taken place in both, and what our ancestors considered indispensable truth, their posterity discovered to be gross errors. To continue the work of improvement, no dogmas, however plausible, ought to be protected from investigation.

If we continue to oppose, do we not so far clog the wheels of time; and we find a certain class of men who would first try and wish to condemn one, that has not yet examined either. Theory and practice neither is envious, and has never shown any aid in the useful to mankind, and some that have a knowledge of some one of the arts, are willing to condemn all others. Religious bigots tell all things by their self-conceited conscientiousness, but the better informed are waiting to know how to decide. Can that be just that is not merciful; Do not cruelty and injustice go hand in hand. Man often would wish to be called a christian, but cannot let his anger rule, for fear of the law of church or country; but on the helpless horse he shows his cruel and debased heart. Reasons are often asked for the cause of all such. The poor man is like a pile of logs covered with rocks for lime, the fire consumes the wood and the stone becomes lime, and its natural character changed then. If water is applied it smokes; if handled becomes unpleasant; this is the case with man and horse. The natural character is to reason right, to teach and to show, not to beat or abuse, for that confuses, for where wit falls pride in our defence, fills all the cavity void of sense. For like causes, like effects, kindness begets kindness in life when properly applied. The learned men of Egypt and Arabia, the eminent men of Greece and Rome, the great anatomical teachers and philosophers of the middle ages knew not the circulation of the blood; how wild was their theory. Yet it was not till the seventeenth century the illustrious

Harvy demonstrated the true nature of the blood, and the manner in which the blood circulates through the body. The more immediate reward of his discovery was calumny, misrepresentation, and loss of his professional practice. So as man had so long to learn his own nature, I may well suppose much longer time to learn the character of the horse that he had no mind, as we have revered the opinion of the former ages in our own health, and caused many to suffer, as I have already shown. You may then well suppose that there is no limit to man's experience that leads to inquiry in the natural law of kindness, as the great God has in his divine wisdom made things to act in harmony and for ease, we, in our powers, cause his natural elements one to destroy another, or cause lighter bodies to sink in the water than the water: in violating these principles we suffer in mind and body. As well might the poet say, "grow wiser now in thy scale of sense, the way thy opinion gains the hand of Providence: go teach the eternal wisdom how to rule in thy sphere of life and be a fool."

Destroy his inclination to contend, and his race would all be destroyed. It is his contentious character that makes him draw the plough, wagon, and persevere on the road with his rider. The same makes man cultivate the soil: it is the spirit of the minister in the pulpit contending for his doctrine; some for one thing and some for another, so is the horse diverse in various ways.

Does not mercy plead for the heaviness of all sympathizing beasts that sigh and sorrow for each other. Can that which is not merciful be preferred to that which is merciful; the dog and the horse have often been seen to show sympathy for their master. Arabin Adolfin after arriving in England, was abused, and would not be ruled by them; three years had passed and he saw his groom that attended him to the country; when he saw him he whined, and showed his friendship to him as the only friend of this country; the sailor showed them all that was necessary. Then it is the case that there are animals who will show more good character than man, for we are commanded to have mercy, do justice, and walk humbly before God.

"The more you can explain and facilitate the attainment of any science, the more you will find that science approach perfection. The true philosopher has always studied to find out relations and resemblances in nature, thus simplifying the apparently wonderful; the most perfect system that has ever

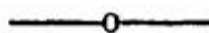
been alluded to to, be that which can reconcile and bring together the greatest number of facts that come within the sphere of the subject of it. In this consists the glory of Newton, whose discovery rests upon no higher order of proof.—How was this discovery received on its first announcement? In the words of Dr. Chalmers, “authority scowled upon it; and taste was disgusted by it; and all the beauteous speculation of former days was cruelly broken up by this new announcement of the better philosophy, and scattered like the fragments of an aerial vision over which the past generations of the world had been slumbering their profound and pleasing reverie.” To nature, eternal Nature, must truth ever make her first and last appeal. By this, and this only, am I willing that the new fabric which I have presumed to erect upon the ruins and reverses of the past, should be tested and tried.

In the higher powers of Observation, Comparison, Comprehension and Direction, termed *Mind* or *Intellect*, man stands pre-eminent above all animals; in so far as regards the more immediate observation of certain things around him, he is nevertheless excelled in some respects by many. The eagle has a finer and farther sight; the hearing of the mole is more acute; the dog and the vulture distinguish odors wholly unappreciable to him; not a few of the wilder denizens of the forest have even a keener sense of taste and touch. In mere perspective power, then, the beasts of the field are in some things permitted to surpass us—while the sagacity of the elephant and the dog, the courage and emulation of the *horse*, the cunning of the fox, and the building habits of the beaver, declare to us, however displeasing the announcement, that others of God's creatures, besides ourselves, possess the elements, at least, of that *reason* upon which we so highly pride ourselves. To the greater degree of complexity, perhaps I should rather say completeness of our *celebral* organization, to our more perfect development of that source of all reasoning power—the *brain*, we assuredly owe this corresponding increase in the number and force of our reasoning faculties. To this completeness of his *celebral* development, man, then, is indebted for his great mental superiority over every other thing that lives, just as certainly as that by the complete mechanism of his comprehensible organ—the *hand*, his power of physically executing what his *head* mentally conceives, places his works and his ways so far above the works and the ways of the whole animal kingdom united. But the

rudiments of this instrumental part of man's reasoning faculties variously developed, may be detected in numerous links of the great chain of animated being, of which he is confessedly the chief. To every variety of race that animates the globe, whether in external or internal configuration, we have undeniably many features, of relationship; nor let us spurn even the meanest and most shapeless as beneath our notice, for if every organic production of their common Maker.—Have not all of them eyes, noses, mouths and ears; senses to see, hear, smell, taste and touch; and each its respective language of sounds and signs, by which it conveys its meaning to the other individuals of its race? Nay, have not animals many of man's passions and emotions—most of his sympathies—his power and choice of resistance—the knowledge by *Comparison*, who is their friend and who their foe; *Reflection*, whom to conciliate, whom to attack, where to hide, and when to show themselves; *Memory*, of kindness; *Imitation*, and consequently docility—in some instances, *simulation* and *dissimulation*, each pursuing its own mode of artifice? Do not their young, too, as in the instance of the child, gambol and play, and leave off both as they grow older, for other pleasure? And, yet, there are persons of a temper so unphilosophical as to deny them *Mind!*—Who will tell me that man is so far superior to the dog in this respect, as the dog is to the oyster! Of mental, as of physical power, there are gradations. If we have stupid and weak men, so have we stupid and weak animals, according to their respective races. But there are dogs that will observe, calculate, and act more rationally than some human fools you may see every day.—When did you find the dog prostrating himself before a figure of his own making asking it questions, supplicating it, and howling, and tearing his hair, because it answered him not? Which of all the brutes quarrels with his fellow-brute for going his own road, whether circuitous or otherwise, to a town or otherwise, to a town or village that does not concern the other in the least? Or which of all the animal tribes manifests such a paucity of intellect, as more than once, to mistake the same false signs for real sense,—imposture for integrity, gravity for wisdom, antiquity for desert? Never in my life, Gentlemen, did I see the dog or monkey implicitly submitting himself to another of his race, in matters that especially interested himself. On the contrary, in the case of the monkey, instead of trusting to the authority of his fellow-monkey, in a spirit of laudible curiosity he has always handled with

his tiny fingers, and *examined* with his quick prying eyes, everything that took his fancy; in no single instance that I remember, did he ever allow himself to be taken by the *ears*. Even in his language of chatter and gibber, he never seems to mistake the meaning of his comrades, never takes one *sign* in two more *senses*,—senses the most opposite,—so as to get confused and bewildered in his manner or his actions. Can you always say this of man? Have you never heard him even in his discussions on this very subject, one moment charging every thing of intellect to *Mind*, at another to *Instinct*,—instinct which, to have a meaning at all, must mean this—right action *without* experience. Horse, when he sees, hears, and touches an object, he becomes convinced. Experience corrects the error of both, and this correction of error is one of the first efforts of the three mental faculties, Observation, Comparison and Reflection. It is with these identical faculties that both men and animals perceive a relationship betwixt two or more things, and act in regard to such things according to their respective interest,—rightly in some instances, wrongly in others. The correction, to-day of the errors of yesterday, is the chief business of men. As he grows in years his experience of things enlarges, and his judgment, as to their true value and relationship to himself, becomes more and more matured. The Brutes, then, have the very same intellectual faculties variously developed, which, when stimulated to their utmost in man, and with the assistance of his higher moral faculties, become *Genius*,—if by genius is meant the discovery of relationships in nature hitherto undiscovered, and leading as all such discoveries do, to practical results beyond contemporary anticipation. Newton's system and Watt's steam engine are examples. Gentlemen, you now clearly see that in the power of gaining knowledge by experience,—call it Mind, Reason, Intellect, or what you please,—the beast of the field partakes in common with man, though not in the same degree, yet both partake of it in a degree equal to the particular position and exigencies in which they are individually or socially placed. For animals, like man, have their cities and sentinels—their watchwords of battle, siege and defence: nature, too, has given them all their respective weapons of offence and defence. Man less gifted in either of these respects, first fashioned his sword and his shield, and his armour of proof. It was only after the experience of centuries, he reached by higher mental efforts; to the knowledge necessary for the construction of the

musket, the cannon, and the other munitions of modern warfare. Necessity was the mother of his invention here, as indeed, in every other instance; but by this, also, the lower animals profit. What but necessity enables our domestic animals to change their habits, so as to live in peace, harmony or slavery with man!—even as necessity obliges man enslaved to do and bear for his fellow-man, things the most repugnant to his nature. How different the habits of the domestic dog, from the dog or wolf of the prairie, from which he originally sprung! In the wilderness, the one would all but perish from stern necessity should *teach* him to hunt down his prey, the other would require precept upon precept through successive generations, before he could be taught like the shepherd's dog to come at his name, and to drive the sheep at his master's call, or arithmetically to single out from the heard two, three, or more, and to watch, or urge them on at his bidding. To deny animals mind, is to deny them design, without which, putting mere instinct apart, neither men nor animals act in any manner or matter.



SYMPTOMS OF DISEASES OF THE HORSE.

The diagnosis of the diseases of the horse, is a matter as important as it is difficult in certain cases. In order to establish it, it is necessary to subject the sick animal to an examination, which not only embraces the disease and its symptoms, but extends also to the rest of phenomena of the animal's peculiar life. The comparison between these two orders of symptoms, shows us how far the present state of the horse is removed from the natural condition, and allows us to establish our prognosis; for it is evident that the more the functions are altered from their normal course, the more the physiogamy of the animal differs from what it should be, the exterior is changed; the more the secretions and excretions have become irregular; the more serious and alarming is the character of the disease.

The examination of a sick animal presents, in some respects more, in some less of difficulty than that of a human being affected with disease. It is more difficult, inasmuch as the practitioner must often dispense with the knowledge of

the case. The animal not being able to speak to inform him of his previous habits, of the injurious influences to which he was exposed, &c., and the persons who are in care of him, generally affording but very incomplete information,—we frequently obtain but very vague and unsatisfactory ideas about the case; besides that, we are not always told respecting the onset of the disease, whether such be really unknown, or those in charge of the animal have been too careless to inquire into it, or there may be some motive for concealing it. Another difficulty is owing to this, that the animals cannot tell us their subjective symptoms, that is to say, what they feel, the nature of their pains, &c.

But on the other hand the examination is more easy in some respects, because the animal, obedient to its intellect, expresses its sufferings by movements, attitudes, looks, sounds, &c. The phenomena themselves are much more distinctly marked, because there is not in this case as in man, the imagination to exercise any influence over them. Also everything discovered in the sick animal may be considered as a consequence of the state of the organs. The pulse and beatings of the heart, among others, afford much more precise and certain signs than in man. A practical knowledge of the symptoms of the disease constitutes what it is called, in veterinary medicine, and is very necessary to the homoeopathist.

It is of the utmost importance, when a sick animal is examined, carefully to collect all the symptoms, even those the least marked, and to arrange them properly; for this is almost the sole and only means of ascertaining the form of the disease: the practitioner having no other resource for this, except to take into account that which is represented externally in the animal.

The order in which we proceed to the examination is not a matter of indifference; from the manner in which it is done, we judge of the skill of the practitioner. Thus it would be giving a very unfavorable idea of oneself to commence the examination by indicating the accessory symptoms, and then to pass to that of the essential symptoms, or to jumble and confound both orders of symptoms indiscriminately. To confine oneself to a certain order, is besides, a means for rendering the examination itself much easier.

The usage is to commence with the symptoms which are referable to the exterior of the animal, and which, as such, first fall under the cognizance of the senses, because in many cases, they are sufficient to enable us to recognize the dis-

ease, and even to judge of its seat. To this head may be referred:—

1st. The movements and attitudes of the body and its several parts, chiefly of the head, eyes, limbs, and tail, as the animal indicates the pains he feels by striving to repel or avoid the pernicious influences from without, or to relieve the sufferings which torture him.

2nd. The look and physiognomy. To be sure it cannot be said that the horse has a physiognomy, in the sense in which this term is applied to the human subject. Still the character, the breed, and the state of health and of disease are expressed in him in a very striking manner. His physiognomy becomes particularly characteristic in tetanus, internal gangrene, vertigo, &c. It is for this reason we should attach a special importance to the examination of the eye.

After having considered all the symptoms connected with the exterior of the body of the animal, we next proceed to examine the pulse and the beatings of the heart. These two phenomena have great value, as characteristic signs, in the diseases of our domestic animals—of the horse more especially. The pulse is felt on embracing the submaxillary artery between the index and middle finger, as it crosses the anterior portion of the tuberosity of the lower jaw. With respect to the beatings of the heart, they are felt by placing the palm of the hand on the horse's left side, not far from the elbow. But to be able to judge of a disease from the pulsation of the arterial system, it is necessary to know the character of the pulse in the state of health, and to have attained a certain degree of dexterity in examining it. The number of the pulsations is about from thirty-two to forty per minute in the adult horse, when in health, and from forty-six to fifty-five in the young horse.—If the animal is irritable, his pulse is more frequent and also harder, that is, it strikes with more force against the finger, which is generally considered a sign of vigor; it is slower and softer in phlegmatic breeds.

The pulse varies very much in diseases. It is accelerated (above fifty, sometimes seventy or eighty, and even up to one hundred or more,) in febrile diseases. The pulse at once frequent, hard, and strong, in general indicates an inflammatory affection. When slow and weak, or easily compressed, it denotes debility, advanced age, or an anemic state of the body. When accelerated or feeble, it indicates imminent danger, and worse still, if it have an unequal, intermitting

character. In pneumonia, it is frequently oppressed. In enteritis, hard, quick, and wiry in its feel. If whilst the mouth and feet are cold, the pulse is no longer felt, life is very seriously threatened. Oftentimes the pulsations of the heart are no longer perceptible during the repose of the animal, but slight motions are sufficient to render them perceptible. Further, there are two circumstances which, must not be lost sight of; the first is, that we can judge so much better of the state of the pulse, the more tranquil the animal is; the second is, that the pulse is influenced by everything which can excite fear or uneasiness, so that we should not examine it abruptly, and before we have familiarized ourselves with the animal to a certain extent.

After the pulse, the respiration should be examined; we should first attend to its frequency and its relations to the pulsations of the heart. In the state of health, the horse respire from nine to ten times every minute. We should see also what the temperature and odor of the expired air may be. We examine all the phenomena with which the respiration may be accompanied, such as different sounds, cough, &c. The animalies of this function possess great importance, not only in the idiopathic affections of the organs charged with its performance, but also in the diseases of other organs, particularly in the brain, heart, &c. In the lesions which compromise the entire vital activity, and in many fevers, especially in those which assume an inflammatory character.

From the respiration, we pass on to digestion. The apparatus destined for the performance of this function furnishes important diagnostic signs, inasmuch as it enjoys a great predominance in our domestic animals, and independently of the diseases peculiar to it, it participates in those of several other systems and organs. We investigate the signs which may be derived from hunger, thirst, the manner in which the animal takes his food, masticates and swallows it, the state of the abdomen, the quality of the alvine dejections, &c.

The total loss of appetite is a phenomenon much more serious in domestic animals than in man. It is, therefore, always a favorable sign when they take food, provided, however, that they are conscious of what they do.

A phenomenon worthy of remark is, that inflammatory diseases in the contraction of the intestinal parieties, and a diminution in the secretions, which may be ascertained by the small size, hardness, dryness, the more or less deep color of

the evacuations, whilst the contrary takes place in putrid diseases, where the alvine dejections are united into larger masses, and generally covered with mucus.

The examination of the urinary organs is necessary, as well in reference to the diseases peculiar to the apparatus itself, as because it contributes to make known the general state of inflammation, putridity, spasms, so that it furnishes signs of the highest importance.

Lastly, we must direct attention to the state of the mucus membranes, those chiefly of the mouth and nose; their pale or red color, and the characters of their secretion affords signs sufficient to indicate certain diseases.

The examination should bear, not only on the aberrations which the vital phenomena have undergone, but also on the causes of the diseases, if they not already appear from the symptoms themselves. As every disease must be considered as the product of two factors, an internal or subjective, cause and an external or objective cause, the veterinary practitioner should give his investigations a two-fold direction. With respect to the animal, he, takes into consideration his age, sex, breed constitution, mode of life, the labor he has had to perform, the state of health he enjoyed hitherto, the diseases with which he had previously been attacked, and the state of those animals of the same breed. With respect to the second point of view, he looks to the state of the atmosphere, the kind of food given him, the character of the stabling, the first morbid phenomena which manifested themselves, the course of the disease up to the present period, and the treatment employed.

Most of the diseases of the horses are accompanied with pains, which manifest themselves externally, according to the parts whence they derive their origin. If the painful part is a foot, the animal assumes an attitude such as may spare this part; when standing, he throws the leg forwards, so that it may have less to do than the other in supporting the weight of the body. In laminitis, when standing, the weight is thrown on the heels. When walking, he rests less on it; when one touches it, he sometimes draws it back, or raises the foot; if the pain have its seat elsewhere, the animal frequently turns his head towards this part, or strikes it with the foot. In case the pains are very severe, he remains if struck with stupor, and with his head inclined to the ground, or else he scrapes with his fore-feet, or stamps with the hind-feet, or he rolls himself on the ground.

The eyes, even when they are not the seat of the disease, often express the state of the animal: dull and full of water, for instance, they indicate exhaustion and weak, whilst when bright, full of force, and projecting out of the orbits, they denote an inflammatory state, or sometimes a very acute pain.

Every time the hair is observed to be dull and staring, it is a proof of disease, for it is shining and smooth when the animal is in good health. This symptom denotes a bad nutrition insution food, more especial abdominal affections, when emaciation is combined with it.

When the respiration is slow and calm, we conclude that there is no fever, and that the pectoral organs are healthy; when it is hurried, violent, and accompanied with heaving of the flanks, it frequently, denotes the presence of fevers, more especially of inflammatory fever, and when there is cough, or stertorous breathing, we infer the existence of some disease of the lungs or the windpipe.

If the horse remains constantly standing up, the fore-legs widely separated, we are warranted in presuming a disease of the thoracic organs, pneumonia, peripneumonia, inflammation of the diaphragm, water in the chest, &c., because in all these cases respiration is performed with more ease whilst standing. When the animal always remains lying down, it is a proof of great debility, or of pain, or some disease of the feet.

Every time that certain parts of the body are either burning hot or very cold, we may reckon it that there is some disease. Heat of the mouth and that of the mouth, with shaking and a staring coat, are invariably symptoms of fever; cold in the head, ears, and feet, frequently indicate great debility and exhaustion of the animal.

“ Oh! mickle is the powerful grace that lies
 In herbs, plants, stones, and their true qualities:
 For not so vile that on the earth doth live,
 But to the earth some special good doth give;
 Nor aught so good, but, strained from that fair use,
 Revolts from true birth, sthmbing on abuse,
 Nortue itself turns vice, being misapplied,
 And vice sometimes by action dignified.
 Within the infant rind of this small flower,
POISON hath residence, and **MEDICINE** power!”

ON MISMANAGEMENT OF FARM HORSES.

By FINLAY DUN, JUN., *Veterinary College.*

PRIZE REPORT.

There are certain conditions which must be fulfilled by man, in order to preserve the domestic animals under his charge in proper health and vigour. These conditions consist chiefly in furnishing them with a sufficiency of good food and pure air, and with efficient shelter from the inclemency of the weather. The proper fulfilment of these conditions constitutes what we understand by good management, whilst the neglect or violation of them constitutes mismanagement.

It is evident that our definition of mismanagement applies to every error in the management of all domesticated animals; but as the present Report is restricted, under several subdivisions, to the "diseases arising from mismanagement of farm horses," we have to consider the subject in regard to them alone, and under the following prescribed head:—

1. Insufficient or improper food.
2. Overwork.
3. Insufficient shelter.
4. Neglect of incipient disease.
5. Want of medical skill in professional attendants.

The diseases induced by bad management of farm-horses are numerous and occasionally severe. They may supervene immediately after an error in management has been committed, but more frequently spring from weakness and susceptibility to disease, produced by continued neglect or error.— Thus a single instance of abstinence from cold, seldom produces in a healthy animal, any permanent evil; but when such instances become frequent, they soon begin to develop their injurious consequences. It is, therefore, by no means a fair

criterion of any system of management to say that it must be good because under its operation disease is not speedily perceptible, for among the lower animals, as well as in man, mismanagement may frequently be long continued before its bad effects become at all apparent. Thus insufficient food, overwork, and insufficient shelter, require a considerable time before they produce even their earliest effect; but in proportion as these effects are slow and imperceptible in their development, there are the more to be dreaded, on account of the ravages they make before being detected or arrested.

Any single cause of disease is greatly strengthened by the co-operation of other causes. For example, deficient ventilation, or want of cleanliness, materially aggravates the evils resulting from hunger, overwork, or exposure to wet or cold; and again, overwork and want of shelter are much more severely felt by ill-fed than well-fed animals. Further, the evil effects of mismanagement are modified by conditions inherent in the animals themselves. Those of strong and vigorous constitution, of hardy breed, or mature years, are less affected by errors in mismanagement than those of delicate frames, of highly artificial breed, or of tender years.

But although in favorable circumstances, and in certain animals, some sorts of mismanagement may appear for a time to be without effect, still they sooner or later produce evident injury, disease, and loss, and thus afford the strongest possible evidence of both the sanitary, and pecuniary advantages of good management. Indeed there is no method by which the advantage of good management can be so clearly shown as by noting the evils of mismanagement. Causes of disease, previously unnoticed or disregarded, are thus exposed to view, and their injurious influences ascertained; attention is also directed to the *preventive* treatment of disease, which is always more certain and satisfactory than the *remedial* treatment, besides being of higher practical value, since it affects numbers rather than individuals, and, when properly studied, leads to the adoption of extensive sanitary improvements.

But without further preface we proceed to the consideration of the first head of the present Report.

1. *Insufficient improper Food.*—The subject of dietetics is so extensive, and the topics it embraces so closely connected with each other, that it is somewhat difficult to consider the question of insufficient and improper food in a detailed and distinct manner, without making some preliminary observations on food in general. We shall, therefore, consider the

subject of insufficient and improper food under the following heads:—(a) The uses of food and the general effects of starvation; (b) the quantity of food requisite for farm-horses; (c) the division of food into two great classes, and the proportion in which these should exist in the diet of the horse; (d) the injurious effects of insufficient food (that is, food defective either in quantity or nutritiveness,) and its influence in developing disease; (e) the evils of too long intervals between the times of feeding; and (f) the diseases induced by improper food, by excessive quantity and unsuitable quality of food.

(a) Every tissue of every animal is constantly undergoing change and decay. Every action, physical or mental, occasions a waste of the structure immediately concerned in the production of that action. Every act of the mind causes a consumption of the tissues of the brain, and every contraction of a muscle renders useless and effete some of the particles of that muscle. The waste produces a constantly recurring demand for new material. At definite intervals this demand attracts attention by exciting the sensation of appetite or hunger; and this sensation is removed and the demand is satisfied when new material is or food is introduced into the body in sufficient quantity and of suitable quality to repair this waste. In such circumstances, the demand and the supply are justly balanced. When, however, the supply exceeds the demand increases in size and in weight. When on the other hand, the demand exceeds the supply, when the amount of waste or effete matter is greater than that which the animal can assimilate from its food, the diet is insufficient, and loss of weight and starvation of some of the structures of the body soon occur. But a system of diet may vary much in the degree of its insufficiency. It may be so greatly defective as speedily to cause death, or so little defective that even after some weeks its effects are scarcely apparent, while between these two extremes the symptoms and effects of the error are of all degrees of intensity.

When the animal is entirely deprived of food, the weight of the body speedily decreases. Those tissues suffer first which are least essential to life: the fat disappears: by and by the muscles shrink and waste; then the bones lose weight: and last of all, the blood becomes so small in quantity and so impoverished in quality that there is not even sufficient nutriment for the brain and other parts of the nervous system, and death shortly follows. The time that animals survive total abstinence from food is much modified by circumstances.

When in good condition and arrived at maturity, they live longer than when lean and not fully grown. When supplied with abundance of good water they also live longer than when deprived of food and water. Thus man, when deprived altogether of food and water, dies in eight or nine days; but with plenty of pure fresh water life is sustained for nearly three times as long. In similar circumstances a horse will live about the same time as a man. Such extreme cases of deprivation are, however, exceedingly rare, but derive great interest from exhibiting in a short space of time, and in the greatest intensity, evils, which a less insufficient system of diet develop only after a great length of time, and in a much less aggravated form. The effects, however, though differing widely in degree, are essentially the same in kind; and all the symptoms of insufficient food, and the diseases to which it tends, depend upon the fact that the waste exceeds the supply.

(b) It may not be out of place to notice briefly the *quantity* of food requisite to maintain farm-horses in good health and condition. This is modified by various circumstances, but especially by the nature and amount of the work they perform. An allowance, suitable during the spring months, and when the work is pretty severe, may consist of the following proportions of oats, hay, and roots, viz. from 10 to 13 lbs. of oats, at 40 lbs. weight per bushel; 14 lbs. of steamed turnips or potatoes. The oats should be bruised, and are most economically given at two different times—one half, in the morning and the other half about noon. It contributes much to the condition of horses to give them a small quantity of beans along with, or instead of, a part of their oats. Hay and fodder should always be given cut; for, by such preparation, it is more easily masticated and digested, and the animal is thus allowed more time for rest. In some parts of the country cut straw is substituted for hay, especially during autumn and the early part of the winter, but such a substitution diminishes the nutritiveness of the diet. The boiled or steamed food is useful for keeping the bowels in good order. It should be mixed with chaff, chopped straw, or meal-seeds, and with a handful of common salt; and part should be given when the horse returns from work in the evening, and the remainder an hour or two after.

(c) Food, besides being insufficient in absolute quantity, is often insufficient from containing an inadequate supply of nutritive materials. To be nutritive, food must be capable of

forming healthy blood, and of building up the various animal tissues. All varieties of food have been subdivided by Liebig into two—the *plastic elements of nutrition* and the *elements of respiration*. The former class includes substances such as animal and vegetable fibrine, albumen, and casein—the latter, substances such as starch, gum, sugar and fat. All articles of the former class, contain nitrogen or azote, and are hence termed nitrogenous or azotized substances. On the other hand, the articles, of the latter class contain no nitrogen, but are rich in carbon, which is often united with the elements of water; and hence they are termed non-nitrogenous, non-azotized, carboniferous or hydrocarbons. Substances of these two different classes are applied in the animal body to very different purposes. The azotized principles are employed for repairing the waste, and adding to the bulk of the muscles and all the more highly organized tissues—they are the flesh producing principles. The non-azotized articles of food are consumed in all parts of the body to support the animal heat; they are burned, or enter into chemical union with the oxygen which enters the blood at every inspiration—they cannot form blood or flesh.

Every natural system of diet, and every system adequate to support life, contains representatives of each of these two classes. In milk, the azotized principles are represented by the casein, and the non-azotized by the saccharine and oily matters; and also in the food of adults substances of each class are naturally mingled. Animals restricted exclusively to azotized food soon become unhealthy, and die for want of fuel to support the animal heat; while on the other hand those fed on non-azotized food, as pure starch, gum, or sugar, die in a very short space of time; dogs, for instance, in about thirty days. In such cases death occurs in about the same time, is preceded by very similar symptoms, and produced much in the same way as when no food whatever is given.—After confining an animal some days to such food, the nutrition of the body is so disturbed, and the powers of life so depressed, that death speedily occurs; nor after a certain time will the substitution of a sufficient diet be of any avail.

The injurious consequences of *too highly azotized food* are seldom or never seen amongst farm-horses, their food rarely containing, for any length of time, an excessive proportion of azotized matters. The injurious effects of an inadequate proportion of these are, however, of frequent occurrence; and food is more often insufficient in this respect than from being

defective in absolute bulk. The proportion in which the azotized and non-azotized elements should exist in the food of horses employed in ordinary farm-work should be one of the former to five or six of the latter. This proportion of nitrogenous principles is somewhat less than that necessary for man, and somewhat greater than is generally present in the food either of cattle or sheep. It will, however, be found to be the proportion in which these two sorts of alimentary principles are present in all well-ordered dietaries for the horse. In some circumstances it may, without detriment, slightly altered. Thus, horses whose work is light will maintain their condition on a somewhat less proportion of nitrogenous principles than that above stated; while those, on the other hand, whose labor is severe and long continued, require a still larger allowance. Young animals, from the rapid growth of their tissues, also require, for healthy existence, a larger proportion of nitrogenous principles than adults; and we accordingly find these principles forming nearly one half of the solid ingredients of all sorts of milk.

(d) With reference to man, as well as the domesticated animals, errors of diet are common, and often attended by serious evil consequences. Numerous facts and statistics, published during the last few years, show that the continuance of a deficient or improper diet inevitably produces sickness and mortality, and this has been especially observed among the lower classes of the community. The recorded rates of mortality in years of famine are always far above the average, and always bear a very close relation to the price and abundance of food, and especially of wheat. Such statistics are of great value, as showing the influence of insufficient food on a very large scale. The history of the Royal Navy, prior to the end of the last century, also furnishes corroborative facts on this subject. Until then scurvy, dysentery, and sloughing ulcers produced incalculable suffering and mortality, and, in the words of Captain Cook, "tremendous calamities" and "depopulation of fleets." By the introduction of a sufficient and well-selected diet the crews of our navy have been also entirely freed of these destructive diseases. "1797," says the official report, "the victualing was changed, greatly improved, and strictly regulated; and consequent immediately to the change the health of the seamen improved strikingly; scurvy, typhoid fever, dysentery, and ulcer, which up to the period of the change had produced great havoc, became comparatively rare in occurrence and light in impression."

From the reports of prisons, workhouses, and other public institutions, we might adduce many other striking instances of disease and death resulting from ill-regulated diets. What has been already mentioned will however, suffice to show that an abundance of good food is essential to the health of man; and if this is true in regard to man, few will dispute that a sufficiency of food is equally essential to the health and well-being of the horse. Indeed, from his nature and the laborious services exacted from him, the injurious influences of insufficient food are as speedily and certainly developed in him as in man, and far more speedily and certainly than either in cattle or sheep.

By *insufficient* food we understand food insufficient either as to quantity or as to nutritiveness; and in the following pages we shall use the term in this twofold sense. It will, however, be obvious from the preceding remarks that these two forms of insufficient food produce similar effects, and that both operate injuriously by reducing the strength and general vigor of the system. Under either system of starvation, horses become lean and miserable looking; their bellies flat, and their quarters thin and angular; their skins adherent to their ribs, and infested with lice and other vermin; and their hair rough and coarse. Their strength and spirit also fail; they are unfit even for moderate exercise, and are dull and listless. These are the consequences of insufficient food with which, on account of their comparatively frequent occurrence, we are most familiar. When, however, the defective feeding is still more excessive, or of longer continuation, or when its injurious consequences are aggravated by other errors, in management, it leads to still greater evils, some of which may be here enumerated. The gradual removal of the fat and shrinking of the muscles produce extreme emaciation; the digestive system loses its tone; and diarrhœa and even dysentery, appear, which rapidly reduce the fast-failing strength. The blood is thin and watery, and passes through the walls of its vessels, causing serious swellings in various of the dependent parts of the body, as in the limbs and about the sheath. This impoverished state of body especially favors the production of two very serious diseases, namely, tubercular consumption and glanders. These affections owe their origin to similar causes: their existence indicate a deteriorated and vitiated state of the blood, and their cure is all but hopeless.

Tubercular consumption is of less frequent occurrence in horses than either in the human subject or in cattle, and is rarely seen except in animals in which there is strong constitutional predisposition to it. If this latent predisposition be excited in early life, the disease generally attacks the mesenteric glands and mucous follicles of the small intestines; these become enlarged, and filled with unhealthy pus and tuberculous matter: the lacted vessels are unable to take up the nutritive portions of the food, and the animal dies of inanition. In advanced life the tubercular deposits are more abundant in the organs of respiration. A gluey fibrinous matter appears on the surface of the mucous membrane lining the air-cells and the smaller bronchii. The more fluid portions of this are absorbed; and there remains a greyish yellow, cheese-like mass, incapable of organization, and containing numerous gritty inorganic particles. After a variable, but generally considerable time, these tubercles run on to unhealthy suppuration; large portions of the lungs become quite inadequate to the performance of their functions; the quantity of the circulating fluids is lessened by diarrhoea and dropsical effusions, and death results from extreme exhaustion. It is stated by Dr. Alison that the causes of pulmonary consumption and scrofulous diseases "may be all ranked together as causes of debility acting permanently or habitually for a length of time, although not so powerfully as to produce sudden or violent effects." But there are few more powerful causes of debility than imperfect nourishment, and therefore we can scarcely deny its great influence in contributing to develop these intractable diseases. Indeed it is well known that such diseases are remarkably common amongst badly-fed portions of the population, and that even amongst the most healthy inmates of prisons a scanty diet has produced, after some time, glandular enlargement of the neck and other symptoms of struma, which entirely disappeared when the prison discipline was somewhat relaxed, and the nutritiveness of the diet increased.

Causes which, in other animals give rise to consumption generally produce in the horse *glanders* and *farcy*. These diseases are essentially the same; they are induced by similar post-mortem appearances, pass imperceptibly into one another, generally co-exist in fatal cases, and are, in short, but two different stages of the same constitutional malady. As induced by insufficient or bad food, farcy usually appears

first, and may continue for some time before any symptoms of glanders present themselves. Both diseases depend upon a vitiated condition of the blood. This, in the first instance, causes irritation and unhealthy inflammation of the absorbent glands and vessels, which become swollen from the deposition of lymph and the inflammation of their valves. The effusion, however, is of a morbid character, and after some time runs on to suppuration; the skin overlying the part is removed by ulceration, and thus farcy-buds are formed. The poison is carried by the blood to all parts of the body, and under certain circumstances, rapidly reproduces itself. Tubercles and unhealthy buds are deposited in all the lymphatic glands and in the substance of the lungs. The functions of digestion and assimilation are imperfectly performed, and the blood becomes so impoverished and vitiated as to be unfitted for the nutrition of the body. Ulcerations appear on the mucous membrane of the nostrils, which is attacked on account of its high vascularity: for those parts first undergo disintegration which require for their healthy existence, the largest amount of blood. The time which elapses between the first development and the fatal termination of glanders is exceedingly variable, being sometimes a few weeks, and sometimes even years. With judicious management and feeding, a glandered horse may sometimes continue fit for work for a very long time; but the action of any debilitating cause calls forth, with unrestrained force, the latent disease, and hastens on the inevitably fatal results. All influences which deteriorate the general health or vitiate the integrity of the system must be considered as causes of glanders. It sometimes follows influenza, strangles, diabets, and other debilitating diseases, and is notoriously the scourge of badly-managed stables. Three of its most frequent causes form three several heads of this essay, viz. insufficient food, over-work, and bad shelter; and all three, as indeed all other causes of the disease, so act as to reduce the powers of life below their natural healthy standard.

Insufficient food frequently causes functional diseases of the digestive system. It produces atony, weakness, and perverted secretion, and is thus a common cause of indigestion, acidity, and occasionally of colic. It favors the development of intestinal worms, and by inducing hunger, or impairment of the functions of digestion, sometimes gives cause to cribbiting and wind-sucking.

There is no age at which animals are exempt from the evils

of insufficient food, but there are certain ages at which they suffer more frequently and severely than at others. Thus the consequences of a scanty diet are more speedily produced, more aggravated and lasting, in very old and in young animals, than in adults, and the reason is obvious. In old age, the powers of assimilation are often considerably impaired, waste is rapid, strength beginning to decline, and health and vigor can only be maintained by abundance of well chosen nutriment; while in youth there is a twofold demand for new materials, which are required at this time not only for repairing the tissues, but also for increasing their bulk. This twofold consumption of aliment, with the want of strength to resist depressing influences, sufficiently accounts for the marked effects of defective feeding on horses previous to maturity.

When insufficient food, as is too often the case, occurs in connection with other errors of mismanagement, its evil consequences become immeasurably increased. When insufficient quantity co-exists with bad quality of food, its effects are produced with ten-fold rapidity and certainty. Irritation of the alimentary canal, as indicated by diarrhœa and colic, is amongst the earliest consequences of this two-fold error. In such cases irritation of the kidneys is also often induced, and this, with an impoverished state of the blood, sometimes gives rise to diabets. Insufficient food greatly aggravates the evils of bad shelter and exposure to rain and cold; it increases their tendency to induce catarrhs, pulmonary affections, ophthalmia, rheumatism, and such like diseases, by reducing the vigor of the body and its power to resist disease; while, in connection with want of cleanliness, it is a fertile cause and great aggravation of mange, grease, and other skin affections.

In fine, insufficient food is sometimes an exciting, but still more frequently a predisposing, cause of disease. It induces a debilitated and deteriorated state of the system, which resists all the exciting causes of disease, favors the transmission of contagious disorders and the development of latent maladies, and lessens in all patients the hope of a speedy and favorable recovery. The evil consequences of a scanty diet often remain long after the error has been amended. All animals lose condition much faster than they gain it. Thus, if the food of a cow be deficient for one day, the milk is reduced in quantity for several days. Again, a starved colt often bears about with him for months, and even years, the unmistakable evidence of an ill-judged economy in his early diet. It requires long good feeding to get him into condition, and

he is in general less easily kept in condition than a horse well fed from his birth. Such facts show the great importance of supplying horses with a sufficiency of food at all times, and any sort of management which overlooks or ignores this fact must be inconsistent with the health of the animals and with the best interests of the proprietor.

(e) Before passing to the consideration of improper food we shall briefly notice an error in the dieting of farm-horses which is unfortunately very widely prevalent. It is this: much too long an interval is allowed to intervene between the times of feeding. The animals are frequently worked for six hours consecutively, and during this time receive no food whatever. Such a practice is very prejudicial to the health of horses, preventing their being kept in good condition, rendering them prone to debilitating diseases, and especially liable to colic and almost all diseases of the digestive system. The natural habits of the horse and the conformation of his digestive system show that he has neither been intended nor is adapted to suffer such long fasts. When at liberty he eats during twenty of the twenty-four hours, and the smallness of his stomach clearly indicates the necessity of supplying him with food at frequent short intervals. Farm-horses, should, therefore, be fed every hour, or at most every five hours; and if there be a longer interval between the regular times of feeding, an intermediate meal should be given. This may conveniently consist of a cake, either of bean-meal, or of a mixture of bean and oatmeal. A pound weight of this, kneaded up with water and sufficiently fired, may be given to each horse; and for the field or road such food, when compared with hay or corn, has the great advantage of being speedily eaten, of affording much nutriment in a conveniently concentrated form, and of being little liable to be wasted.—The author is acquainted with several farmers who give these cakes whenever the work is severe and the hours long, and all of them agree that their horses are now in much better heart and condition, and less frequently attacked by indigestion and colic, than they were when subjected to protracted abstinence and without any intermediate meal.

(f) Food may be *improper* on account of excess of quantity, over-nutritiveness, or bad quality; and under these several heads we purpose noticing the subject of improper food.

An *excessive quantity of food* consumed at one time is very apt to produce immediate bad consequences, as colic, enteritis, laminitis and occasionally, from the great distension gen-

erally present in such cases, rupture either of the stomach or intestines. Affections of this sort frequently occur amongst farm-horses, from the large quantity of food consumed after protracted abstinence, or from their getting loose during the night and gaining access to the contents of the corn-chest. In such cases food is consumed to an amount so unusually large that it is only very partially digested; in this case it soon undergoes chemical change, and becomes a source of irritation, and the intestines endeavor to relieve themselves of their load by those violent spasmodic contractions which form the characteristic symptoms of colic. The irritation, however, is sometimes so excessive that, unless natural or artificial aid be afforded, inflammation is set up. Frequently, too, the sensitive and vascular laminae of the feet become inflamed, constituting *laminitis*, or acute founder. The production of this disease by excessive eating is generally accounted for by the doctrine of metastasis, or in other words, by supposing that the irritation of the alimentary canal is transferred to the feet. In this, as in many other cases in which metastasis is said to occur, there is, however, no actual transference of the disease from one part to another, but merely an extension of the disease from its original seat to parts of similar structure, connected by continuity or contiguity of surface. And hence we find that, in cases of the rapid ingestion of large quantities of food, the consequent irritation of the alimentary canal extends to the laminae of the foot, on account of their being endowed with great vascularity and sensibility.

Amongst the lower animals, the evils of *continued excessive quantity of food* are sometimes conjoined with those of insufficient nutritiveness. Colts fed exclusively on straw, as is too frequently the case during winter, often afford examples of the combined effects of both errors. Straw contains so small a proportion of nutritive material that exceedingly large quantities of it must be consumed in order to supply the waste of the system. The usual consequences of such feeding are, a gradual enlargement of the abdomen, and the production of what is significantly termed a pot-belly. The overloaded intestines press forwards upon the diaphragm, and, by thus lessening the cavity of the chest and interfering with the respiratory movements, unfit the animal for active exertion. From the overworked condition of the digestive organs, indigestion and colic are also apt to occur.

Excessive quantity of highly nutritive food leads especially

to plethora, weed, surfeit and other cutaneous eruptions, as well as to obesity and enlargement of the liver. Blood is manufactured in larger quantity than can be conveniently disposed of; and this plethoric state of body predisposes to affections of an acutely inflammatory type, to apoplexy, and to other diseases of the brain. From the superabundant quantity and rich quality of the circulating fluids, irritation and inflammation of the absorbent vessels and glands are often produced, constituting the disease termed *weed*. This is especially apt to occur in plethoric subjects when their work is less severe than usual; and hence we find that the great majority of cases of weed follow a day of rest. In some horses an excessive growth of the fatty tissues is the consequence of such high feeding. In man a corresponding condition is considered disease, is termed polysarcia, and often leads to serious derangements of important organs. In the horse, however, it rarely causes actual disease, but always unfits the animal for active exertion. Horses fed for a length of time on large quantities of rich stimulating food are very liable to *enlargement of the liver*. Such food requires for its proper digestion very large quantities of bile; and to meet this constant excessive demand the liver gradually becomes increased in size; affording a good illustration of the general rule applicable to all the organs and tissues of the body, that the more a part is exercised the more highly it is developed. From the stimulating nature of their food, brewers' and distillers' horses in particular are very frequently affected with enlargement of the liver; and I have met with several cases in which the enlargement and softening of that organ were so great as to cause rupture and death.

Food is occasionally given to farm-horses in a state of *bad preservation*. The common error of this nature is the use of heated or musty oats or hay. Such food, by irritating the intestines, often give rise to indigestion or diarrhoea; or by stimulating the kidneys produces diuresis and diabetes. When, from bad preservation or other causes, food is of a very defective quality, and forms for some time the whole or a great portion of the diet, it causes all those evils above noticed as resulting from insufficient food. Food, although of perfectly sound and good quality, and capable of forming healthy chyle and blood, sometimes disagrees with horses from its being entirely different from that to which they have been accustomed. It is frequently observed, for example, that, when farm-horses are put upon winter food, the turnips cause at first colic and

derangements of the digestive system. And again, bean and pea straw, which is much used as fodder in some districts, is exceedingly apt to cause colic, unless at first given very sparingly; and yet, after a time, most horses eat large quantities of it with impunity. There are, however, particular sorts of food which always disagree with some horses, and to which they appear never to become habituated. I have known horses which were invariably seized with violent fits of colic whenever they ate a small quantity of turnips, while others were similarly affected by eating either bean or pea straw. Such cases can only be accounted for on the supposition that the stomach and intestines become after a time accustomed to the stimulus of one particular sort of food, which the alimentary secretions soon become peculiarly adapted to digest. If food of an entirely different sort be substituted, some time is required before the digestive system responds perfectly to its stimulus, as the secretions become fitted for its easy and speedy digestion. In a few exceptional cases, in animals of peculiar constitution, and in regard to particular articles of food, this adaptation to the change of food does not occur at all, or only very tardily.

Before leaving the important subjects of insufficient and improper food we shall briefly recapitulate the following practical conclusions, deducible from the various subdivisions we have adopted in the consideration of the present head. To preserve farm-horses in health and vigor, their food must be of sufficient quantity and nutritiveness; it must be given at short intervals; it must not be too large in quantity, or too rich in quality; it must be in good preservation; and it must be changed only with great care, and by slow degrees.

2. *Overwork.*—Farm-horses, as a class, are not so frequently overworked as some sorts of horses. Their work is constant, but slow; and the hours of labor, although occasionally too long, are on the whole tolerably regular. Their diet also, in most of the best-farmed districts of the country, is liberal; and considerable care is paid to their general comfort. Under such management the horses are vigorous and healthy; and although their work may occasionally for a short time be severe, and the times of labor too protracted, still in adult seasoned horses this seldom of itself gives rise to disease. Very different however, is the case where the animals are habitually overworked, especially when at the same time subjected to a deficient system of diet, bad housing, or the breathing of impure air. In such circumstances, over-

work speedily and certainly reduces the strength and vigor, and becomes the exciting cause of some diseases, and the predisposing cause of others; the evil consequences induced occasionally occurring during the undue exertion, but more frequently some time after.

Amongst the most common and certain consequences of overwork are general depression of the vital energies and loss of natural vivacity and of condition. Loss of condition renders the horse very liable to galls from the collar and saddle, which are cured with difficulty, from the small amount of muscle and adipose tissue covering the bones, and from continuance of the hard work. The exhaustion engendered by overwork powerfully predisposes to many diseases. Inflammation of the various parts of the pulmonary apparatus, ophthalmia, and gladders, are, *caeteris paribus*, more frequent visitants of stables where horses are overworked than where the work is moderate and judiciously regulated. And when disease attacks the overworked horse, his debilitated state of body often leads to untoward complications, interferes with the action of necessary remedies, diminishes the efficacy of the *vis medicatrix naturae*, retards recovery, and hastens death.

The limbs of the horse exhibit most exquisite arrangements of parts and curious modifications of structure; powerful, solid, and unyielding levers; muscles condensed into the smallest bulk consistent with strength, or replaced by ligaments and tendons, of more compact and denser structure, and of untiring vigor; cartiliginous pads beautifully adapted for sustaining pressure and obviating concussion; joints whose perfect form excites the admiration of the most accomplished mechanics, and from the study of which they have derived several valuable contrivances; an extensively distributed apparatus, to elaborate and contain an oily fluid for lubricating this wonderful machinery, for preventing friction in joints and facilitating motion of tendons; and at the base of all, supporting the whole weight of the frame, and often exposed to violent concussion, an agglutinated mass of hair, forming the strong, inelastic, non-vascular, and insensible hoof, and affording perfect protection to the highly vascular and sensitive structures contained within it.

But although this locomotive apparatus is of great strength, and adapted to sustain with impunity a great amount of exertion, yet it is often quite inadequate to those tasks of strength or fleetness to which it is sometimes subjected, in

ministering to the avarice or wants, or pleasures of man.

Indeed, there is scarcely a disease of the extremities which is not produced either directly or indirectly by excessive or long-continued overwork.

In violent exertions the bones are sometimes fractured, particularly the bones of the fetlock; but this seldom occurs, except during more rapid work than usually falls to the lot of farm-horses. Laceration of muscular fibre is occasionally met with. The best illustration of this occurs in the disease generally termed *shoulder-slip*, which consists in a tearing of some of the muscular fibres of the antea or postea spinatus, or the teres extensus—muscles lying on the outer part of the shoulder-blade. We shall notice this accident somewhat in detail, as it does not seem to have attracted that attention which it deserves. It appears to be more common in Scotland than in England. It generally occurs in young horses, shortly after they are put in the plough, or in older animals not previously accustomed to such work. The consequence is, that, from a false placing of the feet, and the horse being hurried on by his companion, the muscles of the shoulder are brought into sudden and violent action, and rupture of some of the minute muscular fibres takes place. The animal falls lame, but the lameness is often scarcely perceptible. The muscles affected, being kept in a state of inaction, become atrophied, or wasted to such an extent that the spine and tubercle of the scapula are often felt quite distinctly, and the bone seems in close contact with the skin. From this wasting of the muscles which keep the shoulder-joint in its position, it is thrown outwards at every step giving the animal a rolling, unsteady gait. The treatment of such cases consists at first in rest, and subsequently in gentle and gradually increasing exercise. The application of a blister may sometimes be advisable.

Stains of the tendons of the fore-leg are a very common consequence of overwork. The disease, as met with in farm-horses, generally occurs first in the metacarpal ligament, just above its insertion into the tendo perforans. From exposure to undue tension, several of the fibres of this important ligament are torn, and great pain is in consequence felt, whenever the limb is extended, as when the foot is placed on the ground. Unless the animal be prevented from using the limb, much inflammation takes place, and also effusion, which, by separating the fibres of the ligament from each other, deflects them from their straight course, thus producing at the same time thickening and shortening of the limb. From the

excessive pain, and the endeavors to relieve the strained ligament as much as possible, undue stress is frequently thrown on other parts of the limb; and hence when a horse is still kept at work, the perforans and tendon and suspensory ligament soon become also involved. The tendo perforans is also liable to strain, lower down in its course, near its insertion in the bone of the foot, and just where it passes over the navicular bone. From injury done to this part of the tendon it becomes inflamed, the inflammation extending to the bursæ lying within the tendon, and subsequently, in more aggravated cases, to the bone itself. Friction is produced by impaired synovial secretion, and roughening of the opposing surfaces by effusion; and this gives rise to a very characteristic sort of lameness, a short, tripping, yet careful gait, a peculiar method of standing with one foot projected, a wasting of the muscles of the shoulders, upright pasterns, and a red, inflamed appearance of the sole, especially round the point of the frog. In short, the animal is groggy. He is affected by *navicular disease*, a disease so common as to be familiar to every one having the most limited experience in horseflesh.

But besides diseases of the bones, muscles, and tendons of the extremities, overwork also produces diseases of the tissues of the joints and of the feet. Subjecting animals whose limbs are not of the strongest conformation to continued hard work, often gives rise to diseases of the joints, by causing undue friction. To relieve this friction an unusually large quantity of synovia is poured out, as in *bog-spavin*. This palliation of the evil is often, however, insufficient; the friction still continues, inflammation extends from the synovial fringes to the cartilages; and this occurring in the hock, or in any of the larger joints, eventually renders the animal useless. Friction occurring between tendons, or between a tendon and any other tissue over which it moves, gives rise to *wind-galls*, the most unfailing, although certainly not the most serious consequence of hard work. They consist in puffy swelling of the synovial bursæ, or bags placed to facilitate motion between different parts of the limb. They are usually found about the fetlock, and generally in connection with the bursæ, between the tendo-perforans and tendo-perforatus, or between the tendo-perforans and suspensory ligament. Although various diseases of the foot appear in connection with overwork, still they cannot be considered as depending upon it alone, but are rather induced by its co-op-

eration with other causes, such as peculiar formation of the feet, or improper shoeing. In connection with these, overwork is a fertile cause of *corns*, and also of *contraction*. Its influence in producing *laminitis* will be noticed presently.

The evils of *overwork* are very *remarkable in young horses*, that is, in animals below the age of five or six, because their strength and powers of endurance are not so great as in adult life, and their bones, muscles, and all other structures are still growing rapidly, and want firmness and solidity. On this account, hard work, or any other depressing agent, produces its effects more speedily and certainly before than after maturity. In some parts of the country it is the practice to put horses to work much too young, often many months before they are three years old. Those who adopt this practice generally advocate it on the principle that the animals require exercise, and that such exercise is beneficial to their growth. This is certainly undeniable; but the exercise to which the young horse is subjected is constant unremitting toil, and not the healthful beneficial exercise which he requires, and which he would naturally take. In consequence of such mismanagement, when the animal is five years old, instead of being healthy, vigorous, well-formed and full of animation, he is a miserable, jaded, worn-out, dull, and spiritless creature; his limbs weak, and probably mis-shapen from injudicious wear and tare; his spirit crushed by the hard usage received in urging him to tasks to which his strength was unequal; and if not absolutely unsound, his debilitated constitution renders him an easy victim to many serious diseases. In short, from an ill-judged economy, too often the cause of much mismanagement, a few months' work is gained at the expense of years of good service, and a useful animal is virtually rendered aged before reaching maturity; for certain it is that undue work during early life and before the animal is fit for it brings on premature old age; nor do we think we over-estimate the evil when we say that a year of future usefulness is lost for every month that the colt works before he is fit for it.

The colt intended for agricultural purposes, if well grown and carefully nurtured, may be taken up for work when two and a half years old; but for at least six months' after he should not have more than three or at most four hours' work per day, and that only of the lightest description. With a quiet, steady neighbor, he may be employed for light ploughing, or may be yoked in a thrashing-mill. Until four years

old, the amount and times of work may be gradually increased; and at this age, the animal will be fit for all ordinary farm work, except heavy carting, for which he should not be used until at five years old.

There are two diseases to which overworked young horses are especially liable—splint and spavin. *Splints* are bony tumours, situated between the cannon bones and the small splint bones, and generally occurring on the inside of the fore limbs. They rarely cause lameness, except during their formation, and when high up on the limb. They are produced by an abnormal activity of a perfectly normal process. The bones above mentioned are in early life, united to each other by a cartilago-ligamentous connection; but about the time of maturity, osseous matter is produced by which they become firmly cemented together. If, during this natural process, the animal is made to use his limbs for fast or severe work, active inflammation is set up in the soft tissue between the two bones, apparently as a natural position for strengthening the parts as rapidly as possible, by uniting the two bones into one.—But from the undue action to which the parts have been subjected, the inflammation still continues; and after the bony cement is produced, osseous matter is deposited in nodules. These constitute splints, and until the inflammation is subdued they continue to cause more or less lameness. The inflammation and lameness may be overcome by rest and appropriate treatment; and although the splint still remains, the lameness is cured.

Many horses become the victim of *bone spavin*, from being injudiciously worked at an early age. This disease is apt to occur in animals with upright hocks, and in the case where the width below the hock is disproportionately small as compared with that above it. Spavin, like splint, is caused by inflammation of the ligamentous connection between two bones. It appears on the antero-internal part of the limb, usually between the metatarsal bone and the cuneiform medium, but in some cases between the two cuneiform bones, to which also in severe cases the inflammation often extends. Spavin appears to have been brought about, in the first instance, by pressure and concussion, which cause injury and inflammation of the parts just referred to. This inflammation gradually converts into bone the ligamentous connections between one or more of the tiers of bone forming the hock. During this formation of bone the pain and lameness are most intense, and permanent relief is rarely obtained until the ossification

is completed, which even in favorable cases, prevents all motion between the smaller bones of the hock.

Work to which an animal has not been accustomed, and for which he has not been prepared, is often productive of very injurious consequences. A certain regulation of diet and a certain amount of previous training are absolutely necessary before a horse can with safety perform labor even of moderate severity. Ignorance or neglect of this fact often gives rise to disease. It is, for example, no uncommon thing for a farmer to purchase horses that have stood for some considerable time in a dealer's stable where they have probably become fat from soft feeding and want of exercise. The purchaser naturally enough wishing to test their powers, puts them to the work of seasoned horses, and is surprised to find them fail in satisfactorily performing their allotted tasks. But more than this; serious disease is often the consequence of such severe and sudden trial; and the purchaser, although in error, thinks himself imposed upon, and frequently seeks redress at law.

Derangements of the digestive system and laminitis often result from overworking horses that are out of condition. Affections of the lungs are also frequent among those employed for rapid action, but are less common among agricultural horses.

For the proper performance of digestion and assimilation a large amount of blood and nervous energy is required. When, however, an animal previously accustomed to it, is subjected for some time to excessive hard labor, there is an unusually great expenditure both of blood and of nervous power; and as some time elapses before this loss can be repaired, the functions of digestion are much retarded, part of the food undergoes chemical change, and causes irritation, as indicated either by colic or *diarrhæa*. The latter complaint, especially in young horses with large flat sides, is a very common consequence of such mismanagement, and, unless the diet be attended to, often continues for a very long time, the food meanwhile passing through the intestines, in a crude and undigested state.

Laminitis, or, as it is also termed, acute founder, consists in inflammation of the delicate sensitive laminae of the foot. It may be caused either by the unwonted stress which overwork imposes directly upon these structures, or by derangement of the digestive system of the skin. Violent exertion frequently induces laminitis, by increasing to excess the functions of the

skin, and thus rendering it unusually susceptible of the action of cold. From the exhaustion of the system which usually obtains in such cases, and from the undue elevation of the surface heat, the cold operates as a powerful sedative; the blood leaves the surface and collects round internal organs, and the secretion of the skin is arrested, and all its functions are impaired. The laminae, however, are merely skin modified to serve a special end; they are continuous with it, and are affected by the same agencies which influence it. On account, however, of their extreme vascularity and sensitiveness, they are far more speedily and intensely acted on by any cause of disease, and hence these laminae are often excited to acute inflammation by causes inadequate to inflame other portions of the skin. Such is the manner in which we believe most cases of laminitis to be produced by the influence of overwork.

3. *Insufficient shelter.*—In a climate such as ours, and in the absence of epidemics and epizoots, the great proportion of disease, both in man and the lower animals, is traceable to variable or low temperature. In man a direct relation is observable between temperature and the prevalence of disease. “Temperature, says Dr. Gay, “is beyond all doubt the most influential cause of disease.” The tables of the Registrar-General also establish the fact that a cold season or winter is always accompanied by a high rate of mortality.

Insufficient shelter acts injuriously on all animals, chiefly by exposing them to sudden changes of temperature and to the influence of excessive cold, winds, rain, and storms.

Animals in good health and abundantly supplied with food do not suffer much inconvenience even from very great cold, if unaccompanied by moisture. Of this we have sufficient evidence in the fact that horses, as well as other animals, living at high altitudes, and in climates much colder than ours, enjoy unimpaired good health. In such animals, however, there is a universal expenditure of heat, in consequence of the contact of the cold air, the greater evaporation and radiation from the surface of the body, and the increased density of the inspired air. To compensate for this unusual loss, a *larger supply of food is necessary* than for animals surrounded by and breathing a warmer air. In short, a more rapid combustion is necessary to maintain the heat of the body, and a larger quantity of fuel must be supplied to support that combustion. “The cooling of the body,” says Liebig, “by whatever cause it may be produced, increases the amount of

food necessary." Sheep exposed to the inclemency of winter weather eat much larger quantities of food and fatten more slowly than those in sheltered situations and receiving the same sort of food. The milk yielded by cows is often much diminished if the animals are exposed to cold, even for a short while. Indeed, amongst all animals, the effects of cold are greatly aggravated by insufficient food. Their conjoined influence on man is thus clearly stated by Sir John Richardson:—"During the whole of one March we experienced that no quantity of clothing could keep us warm while we fasted; but on these occasions on which we were enabled to go to bed with full stomachs we passed the night in a warm and comfortable manner."

When the air at low temperature is set in motion, as by *winds*, the sensation of cold becomes much aggravated, and sometimes almost unbearable. In such cases, however, there is no diminution in the temperature of the air. During the keen piercing winds which occasionally sweep over our island, the thermometer indicates that degree of temperature which, in the absence of these winds, would be considered mild and agreeable. This influence of winds, in aggravating the effects of cold, has been noticed by most Arctic voyagers. Thus it is stated by Parry, that he and his crew suffered more from cold in a breeze with the thermometers at 32° Fahr. than in calm weather with the thermometer at zero. The explanation of this is very obvious. Cold air in motion causes more rapid evaporation of fluid from the skin than air at rest of the same temperature; for it speedily displaces the atmosphere of warm, humid air which surrounds the body, and substitutes instead fresh quantities of air at a lower temperature, and hence possessed of greater heat-abstracting power. In this way we may in part account for the great consumption of food, the tardy growth, and poor condition of badly-sheltered horses.

But sufficient shelter, besides exposing horses to the evil of colds also affords them imperfect protection against undue *moisture*. The inhalation, for any considerable length of time, of an atmosphere surcharged with moisture, cannot but exercise a deleterious influence on the animal body; for such an atmosphere contains, in proportion to its volume, less oxygen than drier air, and possess a power of diffusion considerably inferior to it. This diminished power of diffusion interferes with the full and rapid arterialization of the blood—a process on the due activity of which depend life and health.—The presence of moisture in the atmosphere does not neces-

sarily reduce its temperature, but appears to modify the action of that temperature, and to render it more hurtful. Moisture also promotes decomposition and facilitates the transmission of infectious disorders. When conjoined with undue warmth, moisture has a powerfully relaxing effect, and thus prepares the body for the favorable reception of the exciting causes of disease. But when it occurs in connection with cold, it is then that dampness induces its most frequent and serious evils—its power being increased tenfold. It abstracts heat and electricity from the body, interferes with the important functions of assimilation and secretion, arrests the cutaneous exhalations; and thus gives rise to abnormal changes in the blood, to the retention of effete particles, and to the imperfect renovation of the plasma. Such are the general effects of the conjoined action of cold and wet, and to this conjoined action may be ascribed many of the worst evils of insufficient shelter.

Shelter may be insufficient, either from the exposed position of pasture-lands or of farm-steadings, or from the faulty construction or bad repair of the stables, courts, or sheds, in which animals are housed. The general effects of these different sorts of bad shelter do not however materially differ. It would appear at first sight a very natural supposition that an animal should suffer less when placed in a draught of cold air than when completely surrounded by an atmosphere at the same temperature; because in the former case the cold acts only on one particular part of the surface, while in the other it acts upon the whole surface. Experience, however, leads us to a very different conclusion. But, although every one admits the danger of currents, few consider the manner in which they prove injurious. When a healthy animal is placed in a cold atmosphere, the cold unless very intense, stimulates all the vital functions to increased activity; the respirations are increased in force and frequency; the inspired air is dense, and hence contains a large quantity of oxygen in proportion to its bulk; and thus the animal heat and vigor of the circulation are maintained unimpaired. But the case is very different when cold is applied locally by a current of air. The part subjected for some time to its sedative influence becomes bloodless, its functions disturbed, and its secretions arrested. The effects of the cold are not sufficiently extended to induce the necessary reaction; the balance of the circulation is disturbed, and then inflammation of predisposed parts is the usual consequence. Disease is thus often

produced in small and badly-constructed stables. These, from being over crowded, and from want of appliances for efficient ventilation, often become overheated; and to remedy this evil the doors and windows are thrown open, admitting currents of cold air. The previous heated, and it may be, fatigued condition of the animals, predisposes them to suffer from this mismanagement; and many serious and fatal catarrhs, bronchitic, and pulmonic affections, are traceable to such errors.

If horses, especially after continued severe exertion, remain exposed to inclement weather, or are put into stables where they are rapidly cooled by draughts, the vessels on the surface of the body become constricted by the action of the cold, and blood is driven in excessively large quantity to the internal organs. These soon become surcharged and oppressed with blood, and their functions impaired and arrested. The balance of the circulation is thus disturbed, and effete matters are retained; and from the operation of these two causes inflammation is produced. This inflammation attacks those parts which are weakest and least able to withstand the assaults of disease. Hence, according to the predisposition of the animal, and in proportion to the amount and duration of the exposure, insufficient shelter will induce inflammation of various parts of the respiratory apparatus and of the eyes, derangements and diseases of the bowels, feet, and kidneys, rheumatic affections, and general depression of the vital energies.

In localities where shelter is wanting or insufficient, *diseases of the respiratory organs* are unusually frequent and severe. The mucous membrane lining these organs is particularly apt to suffer. In the horse, the membrane is very vascular and sensitive, and covers a large extent of surface. In the nostrils, it is thick, and copiously supplied with large blood-vessels, and assumes a condition very similar to erectile tissue. It is this peculiarity of conformation which predisposes the horse to *catarrhal affections*, or, as they are familiarly styled, "colds in the head." These consist in inflammation of that portion of the respiratory mucous membrane which lines the nostrils and sinuses of the head. Dryness of the parts affected is soon succeeded by copious discharge, at first, of a thin watery fluid, and subsequently of a thick mucopurulent one. The eyes are also red and weeping; for, as usually happens in such cases, inflammation speedily extends to surfaces of like structure and close proximity. There is more or less feverishness, as indicated by the impaired appe-

tite, quickened pulse, and unequal surface heat. The inflammation often extends downwards, and involves other parts of this extensive mucous membrane. It sometimes attacks that portion lining the larynx, and, from the effusion produced, the symptoms are often very acute, and the issue precarious. More commonly, however, it affects that portion of the mucous membrane which lines the trachea, bronchii, and minute air-cells, causing *bronchitis*. The principal phenomena attending this disease are the same as in catarrh, namely, effusion and fever. The particular symptoms are modified by structure and functions of the parts affected, and are described in detail in most treatises on veterinary science. Other parts of the respiratory apparatus besides the mucous membrane are also apt to suffer inclemency of weather. Horses exposed to low temperatures or stormy winds, or placed in currents of cold air, throughout most of its extent, from the nostrils to the ultimate air-cells, as also the tissue of the lungs and their serous covering; and death usually results from suffocation, caused by the large quantity of frothy mucus poured into the trachea and bronchii.

Many of the diseases affecting the eye often originate from insufficient shelter. There is no cause of simple *ophthalmia* or inflammation of the conjunctiva—the mucous membrane of the eye—so frequent as cold. Nor is it an unfrequent cause of that more serious and deep-seated inflammation of the eye, known amongst veterinarians by the name of specific *ophthalmia*. When the exciting cause is slight, and its continuance transient, the more external of these inflammations is generally produced; but when very intense, or of long continuance, the more deeply-seated usually occurs. The latter is usually attended by very aggravated symptoms, is tedious and troublesome of cure; apt to induce cataract, and always predisposes the eye to suffer from a return of the inflammation, especially when the vital functions are in a state of depression, are sometimes attacked by *pneumonia* or inflammation of the substance of the lungs, but still more frequently by *pleurisy* or inflammation of the serous membrane which covers these important organs, and is reflected over the inner walls of the chest.—Diseases of the respiratory organs, produced by exposure, exhibit some characteristic features, which distinguish them from the same class of diseases resulting from other causes. These diseases affect, to a greater or less degree, almost all parts of the respiratory apparatus; the mucous membrane is involved.

The influence of the weather on *affections of the bowels* is

not so obvious as on those of the respiratory organs. The same inclement weather which produces in most horses, catarrh, bronchitis, or pleurisy, occasionally gives rise to *enteritis*.— This is most apt to attack horses with flat ribs, and those subject to indigestion and colic. Such cases of enteritis are exactly similar to those produced by other cause. They are characterized by the same symptoms, require the same treatment, and run their course with the same frightful rapidity, sometimes destroying life in six or eight hours. When horses are plentifully supplied with good food, steady and continued cold rarely causes *diarrhæe*. This affection, however, is frequently produced by sudden alterations of temperature, or the conjoined action of wet and cold, and in such circumstances is often very troublesome and apt to become habitual. It is the same disease as catarrh or bronchitis, except in situation. It depends on irritation of the mucous membrane, and of the mucous follicles abundantly distributed on it, and which pour out an excessive quantity of fluid.

Exposure to wet and cold, by deranging the functions of the skin, sometimes induces *laminitis*, especially if the horse be over-heated and exhausted from severe or long-continued work. The production of laminitis in such cases has already been noticed under the second head of this essay, and therefore need not be again adverted to here.

When horses, previously well housed and tended, are exposed to rain and cold, they are occasionally attacked by inflammation of the kidneys, which frequently results from the continued dropping of the loins, or from exposure to drifting snow sleet. The disease, however, is not of frequent occurrence in the horse, but most cases of it result either from the above-mentioned cases, from injudicious feeding, or from the excessive action of powerful diuretics; and not, as is generally stated, from blows or external injuries, which cannot, we think seriously affect organs so deep-seated and protected as the kidneys. *Nephritis*, or inflammation of the kidney, is ushered in with ordinary febrile symptoms: the pulse is accelerated, but soft, from the large amount of mucous membrane involved; the bowels are out of order; there is sometimes diarrhæe, but more generally constipation; the animal walks with a straddling gait, and if turned round grunts with pain. When one kidney only is affected, the stiffness and lameness are confined to the corresponding side; the urine is diminished in quantity, and altered in quality, it is sometimes mixed with pus, sometimes with blood; it may be liquid, or in clots or shreds:

the pulse after a time becomes much accelerated, and symptoms of coma appear, depending upon arrested action of the kidneys, and accumulation of urea in the blood.

Inexposed situations, the fibrous and fibro-serous tissues are very apt to become affected by *rheumatic inflammation*.— This variety of inflammation is principally confined to these fibrous tissues, is attended by fever, manifests a marked disposition to shift from one part to another, and differs from ordinary inflammation in its terminations, for it does not run on either to suppuration or gangrene. Some animals have a greater disposition to it than others; but this predisposition may be engendered, even in the healthiest subjects, by exposure to cold and wet. Such agencies appear to induce rheumatism, by causing an abnormal congestion of the internal organs, and arresting the cutaneous excretions. Effete matter is thus retained in the blood, exciting irritation in the congested parts and especially in the fibrous tissues. The symptoms of rheumatism vary with the parts involved. When muscles of the neck and back, it constitutes what is termed the *chorda*. This affection is attended with stiffness and tenderness of the neck and back, inability to elevate or depress the head, and great difficulty and pain in moving. The febrile symptoms are often violent, and there is a full, strong, incompressible pulse—a very characteristic symptom of all rheumatic affections. Such cases are often troublesome, generally lasting some weeks, but they are not in general very dangerous. The joints, and especially the larger ones, are sometimes the seat of rheumatic inflammation; but this form of the disease is less frequent in horses than in cattle. It is attended by stiffness and inability to move, pain on pressure, and more or less fever. The inflammation attacks one or two of the joints, and then, leaving them, involves others, and, in bad cases, the pleura and pericardium are often affected. This tendency of the disease to shift from one part to another is, we think, an unanswerable argument in favor of its being a disease depending upon some change in the blood, and not a mere local affection.

Insufficient shelter, besides being a potent *exciting* cause of disease, is also a *predisposing* cause of many and various maladies. It produces depression of the vital energies, and hence renders animals subject to its influence, especially liable to epizootic diseases. From its debilitating and deteriorating influence, it leads to phthisis pulmonalis, glanders and farcy. Further, it produces a habit of body which aggravates

the character of many diseases, renders them unusually intractable, and apt to assume untoward complications. Animals reared in such unfavorable circumstances are long in coming to maturity; they have in general a miserable and unthriving appearance, their skins are thick and hard, and their hair long and coarse.

But to conclude, we may remark, by way of recapitulation, that the insufficient sheltering of farm-horses is productive of many and various evils. It causes an unusually great consumption of food, and even with the most liberal diet good condition is rarely attainable. It produces disease, sometimes by causing sudden and great derangements of the circulation, and sometimes by depressing the vital energies.—By the former mode of action it generally induces pleuronic or acute inflammation; by the latter pulmonary consumption glanders, and farcy. In short, insufficient shelter may be considered as the special exciting cause of all affections of the respiratory organs and of all rheumatic inflammations, and a powerfully predisposing cause of almost every disease.

4. *Neglect of Incipient Disease.*—There unfortunately prevails amongst farmers a disposition to overlook or think light of the promonitory or incipient symptoms of disease. Even after an animal is discovered to be ill,—and this, from carelessness or want of observation, is not always so early as it ought to be,—much valuable time is often lost in supinely waiting to see if the case will spontaneously improve, or in the employment of useless or injudicious measures. In many diseases of the horse such procrastination is productive of very serious injury, of inducing permanent unsoundness and even death, and always prolonging the duration of the malady, and increasing the difficulty of treatment.

Certain indication or signs, or as they are technically termed, *symptoms*, always precede and accompany disease. These serve the important purpose of attracting attention to disease, and are therefore safeguards against its extension or increase. The symptoms which in the horse indicate the *approach of internal disease* are generally of a febrile character. The animal is dull and listless, or restless and uneasy; the surface heat unequal, the ears and extremities cold, and the mouth hot; the digestive functions deranged and the appetite impaired or capricious; the pulse slightly accelerated and the respirations hurried. When an animal shows several of these symptoms, and, still more, all of them, he should be narrowly watched; If in plethoric condition blood may with

advantage be abstracted, and a laxative administered; and on the earliest manifestation of the localization of the disease other appropriate remedies should be promptly used. The symptoms manifesting incipient disease of the extremities are more or less pain when the parts are put in motion, unwillingness to use the affected parts; in short, lameness and tenderness. These symptoms, although easily observed, and often traceable to their causes, are frequently neglected.—The horse, instead of getting a few days' rest and a little attention, is still kept at work, until perhaps he can go on no longer. The nature of the case is then for the first time examined, and its treatment commenced; but from the previous procrastination and neglect, several weeks of rest and of proper medical [treatment are often required to render him fit for work.

In the ordinary affairs of life "there is a tide which, taken at its flow, leads on to fortune;" so also in the treatment of disease, there is a time when remedies are most likely to be attended with success, and that time is undoubtedly the early stage of disease. All diseases at their outset are more manageable than they are after a time. Thus, in the case, even of the more serious local inflammations, the symptoms are at first few and simple, and perhaps not very intense; the powers of nature are strong and active, and the action of remedies comparatively certain. Unless, however, a change for the better is either naturally or artificially brought about, the number and intensity of the symptoms go on increasing; the conservative power of nature becomes impaired; the disease, from being merely local, involves the whole system; the digestive functions are deranged, the circulation, and hence the respiration affected; morbid changes are in progress; and remedies act slowly and uncertainly, and are often quite ineffectual in controlling or subduing the now fully developed disease. In *pneumonia*, or inflammation of the lungs, for example, there is at first coldness of the surface, cough, fever, slightly accelerated pulse or breathing; and well directed measures will often entirely and speedily avert further evil effects. Should this stage, however, be allowed to pass unattended to, these symptoms become aggravated; effusions are poured into the areolar structure of the lungs, become organized, and, as no treatment whatever can remove them; they often even when recovery takes place, interfere with the important functions of respiration, and permanently impair the integrity of the organs.

There are, we believe, but few diseases which do not afford the clearest and most incontrovertible evidence of the importance of early judicious treatment; and the injurious consequences of the neglect of such treatment. This is, however, chiefly observable in acute diseases. It is well known, for example in enteritis. In the horse this disease sometimes runs its fatal course in six hours, and even in four; and unless the earliest symptoms be noticed and combated, there is but little hope of a successful issue. The inflammation affects the mucous coat of the intestines, exhibits great tendency to spread all parts of this delicate and sensitive membrane, and also involves the serous and muscular coats. It is on this account that such cases are so unmanageable; for the rapidly extending inflammation and great amount of effusion produce such a shock, and cause so much debility, that death speedily ensues.

Wounds, when neglected, frequently take on very unfavorable conditions, which ordinary attention might have easily prevented. Simple incised wounds from want of cleanliness, often run on to suppuration; and in certain situations, where matter or other irritants are permitted to accumulate, sinuses and fistulæ are frequently induced. Thus, slight injuries about the poll or withers, or in the neighborhood of ligamentous and fibrous tissues, when not properly attended to often run on to the formation of extensive, deep-seated and tedious wounds. Pricks and other injuries of the foot, when promptly attended to, are generally easy of cure; but when neglected, give rise, amongst other diseases, to sinuses or quitters, which pass in various directions, destroying the connections between the hoof and the vascular parts of the foot, involving sometimes the coffin-bone itself; and months of patient and unremitting care are often ineffectual in restoring the parts to health.

Before leaving this head, we purpose briefly noticing a few of those *diseases of the extremities* which are most apt to be *aggravated by inattention* to their incipient symptoms. There is no case in which neglect of a simple ailment so frequently and certainly induces serious and permanent disease as in that very common affection termed *strain of the back tendons*.—This often consists in the laceration of only a few of the tendinous fibres, which with rest soon reunite, and the animal is soon restored to soundness. But if kept at work, the laceration increases, violent inflammation is established, and thickening contraction and permanent unsoundness are the inevi-

table, consequences. *Bone Spavin*, when noticed early, is sometimes checked by rest and soothing treatment; the different parts of the hock being thus kept sound and perfect.—When spavins, are not early attended to, and especially if the horse continues at work, the inflammation attains such intensity that it cannot be subdued until osification has taken place between some of the bones forming the hock. It is to hurry on this unavoidable termination that blisters, firing, and such other remedies are so often employed; but the cure is accomplished only at the expense of entire loss of motion between the several bones forming the lower part of the hock; and although the animal may go sound he always goes stiff. A similar result obtains in the case of *curb*. This consists in a strain of the calcareo-cuboid ligament—a ligament which passes down the postera-internal surface of the os calcis, or prominent bone of the hock. It is at first tolerably easy of cure; but if neglected or improperly managed, thickening and osification take place. Spavins, or, as they are called by way of distinction, *bog-spavin*, also afford a good illustration of the retributive justice which overtakes neglect of the incipient symptoms of disease. In these cases we find in the first instance the capsular ligament of the hock-joint distended by an excessive quantity of synovia, secreted to lessen the irritation set up by previous friction. Unless there be a repetition of the exciting cause, this curative effort of nature may be successful, and with rest soundness may be restored. If, however, sufficient time be not allowed for a perfect cure, the joints become permanently thickened by deposition of lymph: and sometimes osseous matter is produced, uniting the bones of the hock into one unyielding bony pillar. I have seen several specimens of such cases of *anchilosis* of the bones of the hock, resulting from disease of the joint, and in which all parts of the hock were ossified except the tendons and the grooves in which they lay.

In many of the hilly parts of the country young horses are subject to a species of *dislocation of the patella*, the bone being jerked inwards at every step the animal takes. In very aggravated cases there is little hope of perfect recovery, as there is generally knuckling over at the fetlock, which renders the animal perfectly useless. It is only, however, from the most culpable neglect that such cases assume a serious aspect: for when observed and attended to sufficiently early, they are generally entirely cured by the adoption of very simple measures, such as the removal of the animal to

soft and level pasturages, and the putting on of light shoes. The following case, which recently came under my observation, shows at the same time the importance of arriving at a correct diagnosis, and also the evil of delaying the adoption of proper remedial measures. Several horses were standing together in an innkeeper's stable, and one of them made a kick at his neighbor, and struck him a few inches above the hock, on the inside of the hind limb farthest from him. As however, there was little apparent lameness, and no swelling or injury of the skin, the animal was put to work as usual, but was soon seen to move on three legs. On examination there was found to be *fracture of the tibia* with displacement; and the animal was destroyed. In this case the kick must have produced fracture more or less complete, but without displacement; and had the nature of the case been at first fully ascertained, and the animal kept at rest for a few weeks, perfect recovery would have taken place. But instead of this, the animal was put to work, which caused entire separation of the parts, and prevented all hope of a speedy recovery.

From inattention to shoeing, and neglecting to relieve a tender sole from undue pressure, corns are produced. These, when uncared for multiply and reach the quick, causing much lameness, and it may be supparation and detachment of the hoof. A trifling sandcrack, when neglected, often extends through the whole crust, and months of care may be required before the breach is perfectly repaired. A slight injury of the anterior part of the foot, or inattention to a badly-adjusted clip, frequently produces a seedy-toe. Neglect of cleanliness gives rise to thrushes; and mismanaged or neglected quitters to false quarter.

But we must now leave this head, not because we have exhausted the subject or the illustrations that might be advanced to show the evils of neglect of incipient disease, but because a further discussion of the subject would involve much repetition, without strengthening materially our arguments, while the illustrations that might be adduced are numberless, seeing that the principle applies to almost every disease and injury to which the horse is liable.

5. *Want of Medical Skill in Professional Attendants.*—It is difficult to estimate the amount of evil arising from want of medical skill in professional attendants. Such want of skill may operate injuriously in almost every disease. It may be shown either by injudicious treatment, or by failing to employ proper treatment—it may consist either in doing positive

harm, or in failing to do good—it may do too much, or not enough. In short, there is no error, great or small, into which want of skill may not lead the practitioner. And to refer, however briefly, to all the circumstances and diseases amongst horses, in which want of skill is sometimes shown, would be to notice almost every affection to which the horse is liable. It will, however, we believe, be more in accordance with the intention of the proposed head if we confine our observations to the mistakes and errors which most frequently occur amongst persons of some professional standing.

Want of medical skill in the *treatment of disease* is sometimes shown in the employment of unsuitable remedies, and also in the injudicious use of proper remedies. This, we believe, is often the case with *bloodletting* in inflammations of the respiratory apparatus. In many cases the medical attendant is not called in until the second or third day—until the intensity of the inflammation has passed away. The patient, however, is examined, and the case pronounced to be pneumonia, pleurisy, or bronchitis. If the practitioner be one of those who treat diseases merely according to their names (and there are still too many such,) he immediately abstracts blood, on the ground that bleeding is placed first among the remedies for such diseases, and is moreover the “sheet-anchor for the cure of inflammation.” A more intimate acquaintance with the phenomena of such inflammations, would, however, have taught the practitioner that the treatment adopted, although very weakening for the early stages of the disease, could be of no service in the latter stages, when effusion had taken place, and the more acute inflammation had been thereby overcome; and that such treatment could only retard recovery, by debilitating the patient to no purpose. It appears to us that the great majority of veterinary surgeons are much too fond of bloodletting, and often practice it where it can do no good, and may do much harm. As above stated, they often err in employing it when the time has passed for its being of any use. This and similar errors depend in a great part upon a morbid love of intermeddling, and determination to do something—faults however, for which the veterinary practitioner is not always accountable, since his employers are seldom content to leave matters to the curative powers of nature, thinking that the more physicking, bleeding, and medical treatment the patient gets, the better. This mistake appears to be prevalent in many parts of the country, but especially in some of the more wealthy manu-

facturing districts. Such opinions are however, very erroneous, and the practice to which they lead is often extremely injudicious. The evils of such practice are chiefly observable in some of those cartarrhal affections occasionally occurring, as epizootics, in most varieties of that ill-defined disease influenza, and in all the exanthemata or eruptive fevers. Such diseases generally run a certain definite course, and whatever interferes with that course is productive of more or less injury; they show a marked tendency to spontaneous recovery, require only the use of measures which second the efforts of nature, and are far more frequently mismanaged by two much than two little treatment.

From these remarks it will be apparent that medical attendants may sometimes betray want of skill in employing remedies in all stages of a disease which are suitable only in one stage; in treating cases of the same disease in exactly the same manner without any regard to modifying circumstances; in intermeddling with diseases which are best left almost entirely to nature; or in attempting to alter the fixed and natural course of disease.

But want of professional skill, besides being often apparent in the treatment of disease, is perhaps still more so in the *diagnosis* and *prognosis* of disease. This is clearly shown in the various contradictory statements made by different practitioners concerning the same case, as may often be seen in the annals of veterinary jurisprudence and the reports of many of our courts of law. How often, for example, do we find the most conflicting opinions entertained on questions of *soundness*! How faulty and absurd are the ideas propounded concerning the nature of disease! How fallacious the opinions often given of the probable duration of particular cases, and of the time required for the production of certain morbid appearances of death! How common the error of mistaking one pathological condition for another, as congestion for inflammation—a chronic debilitating disease for an acute and inflammatory one—a simple and curable malady for a severe and incurable one!

There may occasionally be some difficulty in distinguishing between normal and abnormal appearances; the gradations between health and disease being so often so slight and imperceptible that it is difficult to say where the one ends and the other begins; and hence perfectly *healthy conditions* are sometimes *mistaken for morbid conditions and vice versa*. Thus, many

horses have been rejected as unsound, in consequence of the opening through which the optic nerve passes being mistaken for *cataract*. Indeed, the highest perfection of form has frequently been mistaken for disease. Many animals have been condemned as spavined on account of the remarkable development of the natural roughened eminences on the antero-internal part of the hock around the anterior and inner part of the cuniform bones. This conformation, however, instead of showing weakness or disease, gives strength and power by affording mechanical advantage for the insertion of muscles and tendons. The natural ridge extending round the small pastern-bone is also apt, when prominently developed, to be mistaken for *ring-bone*. True ringbone, however, is situated lower down, and immediately above the upper part of the hoof, and often exists in only one limb; whereas the ridges and tuberosities to which we have referred will be found alike in both limbs, and only in limbs which show in other parts considerable irregularities and asperities. The sulcæ and cavities found in the cartilages of the lower joints have, by some, been mistaken for ulcerations; and one gentleman of high standing in the profession, has stated, that the presence of these cavities in the hock-joint was the cause of obscure hock lameness. Unfortunately, however, for the credit of this opinion, such cavities are found in many, nay, in most, sound hocks, and are placed there for the important and express purpose of spreading the synovia, or joint-oil, over all parts of the joint. They have many characteristics which distinguish them from cavities caused by inflammation: their edges are smooth and glistening, and they are lined with vascular synovial fringes. These few instances show the want of skill of some practitioners in mistaking healthy for diseased conditions, and strengthen our conviction that the veterinary practitioner should have an accurate knowledge of healthy structure and functions, as well as of morbid structure and functions; or in other words, of anatomy and physiology, as well of pathology.

There is, perhaps, no class of cases which brings the skill of the veterinary surgeon to a severer test, than injuries or disease of the extremities, or, as they are significantly termed, *lamenesses*. In the horse these are very numerous; they occur in almost every part and tissue of the limbs, and are sometimes difficult to detect, as they are often concealed from view, not being perceptible except by nice manipulation, while their symptoms are apt to be falsely interpreted. A

knowledge of the anatomy and physiology of the parts affected, and a certain amount of experience and of manual tact and dexterity, are the only sure means of detecting lamenesses and arriving at their accurate diagnosis and prognosis.

Want of medical skill in professional attendants is now much less common than it was even a few years ago: and in most localities where agriculture is in an advanced condition, and stock numerous and valuable, there are to be met with veterinary surgeons of liberal education, and possessed of a competent knowledge of both the principles and practice of their profession. This improvement in the skill and education of veterinary practitioners is, we believe, the result not of one, but of several, causes. It has been brought about by the increased value of all domestic animals, by the spread of knowledge among agriculturists, by the necessity consequently felt throughout the country, of having skilful and thoroughly educated men to whom to confide the medical care of stock; and it has also been promoted, in no small degree, by the valuable instructions now afforded at both the London and Edinburgh Veterinary Colleges in all departments of veterinary knowledge. Farther, the Royal English Agricultural Society and the Highland and Agricultural Society of Scotland have materially contributed to the advancement of veterinary science, and to the consequent improved position of its practitioners, by their active exertions and liberal support. The salutary influence of these two Societies on the improvements of veterinary knowledge can scarcely, we think, be over estimated. By patronage and pecuniary aid they have extended and improved the courses of professional study; by premiums for papers on various veterinary subjects they have elicited and disseminated very important information concerning the management of animals both in health and disease; and by the personal interest which so many of their most influential members take in the advancement of the veterinary art, the profession is rapidly attaining that status to which its importance and usefulness justly entitle it.

Note by the Author.—These principles will apply to all animals, and should be adopted to all. If you will examine this well, and all the circumstances equally favorable, you will see the importance of its usefulness.

HEALTH

An equitable and medium temperature prevails throughout the frame. The voluntary and other muscles obey with the requisite alacrity the several necessities that periodically call them into action. The mind neither sinks nor rises but upon great emergencies; the respiration, easy and continuous, requires no hurried effort—no lengthened sigh. The heart is equal to its beats and not easily disturbed; the appetite moderate and uniform. At their appointed periods, the various secreting organs perform their office. The structure of the body, so far as bulk is concerned, remain, to appearance, though not in reality, unchanged; their possessor being neither encumbered with obesity, or wasted to a shadow. His sensorium is neither painfully acute nor morbidly apathetic; he preserves in this instance, as in every other, a happy moderation. His sleep is tranquil and dreamless.

If we analyze these various phenomena, we shall find that they all consist of a series of periodic repetitions, each separate organ having its own particular period for the proper performance of its function; some of these phenomena are diurnal, some recur in a greater or less number of hours,—while others exhibit a minutely or momentary succession. At morn, man rises to his labor; at night, he returns to the repose of sleep; again he wakes and labors; at the appointed period he “sleeps his senses in forgetfulness” once more. His lungs now inspire air, now expel it; his heart successively contracts and dilates: his blood brightens into crimson in the arterial circle of its vessels—again to darken and assume the hue of modena in the veins. The female partner of his lot—she who shares with him the succession of petty joys and sorrows, hopes and fears, which make up the day-dream of life, has yet another revolution, the *Catamenial* and *Parturition*, or the process by which she brings their mutual offspring into the world, is a series of *periodic* pains and remissions.

Every atom of the material body is constantly undergoing a revolution or alternation; liquid or aeriform one hour, it becomes solid the next—again to pass into the liquid or aeriform state: and ever and anon varying its properties, colors, and combinations, as, in brief, but regular PERIODIC succession it assumes the nature of every organ, tissue, and secre-

tion, entering into, or proceeding from, the corporeal frame. "It is every thing by turns, and nothing long."

The phenomena of the human body, like every other phenomenon in nature, have all a relation to MATTER, SPACE, and TIME; and there is another word, MOTION, which may be said to bring all three to a unity; for without matter and space, there can be no motion, and motion being either quick or slow, must also express time or PERIOD.

Moreover, there can be no *motion* in matter without *change of temperature*, and no change of temperature without *motion in matter*. This is so indisputable an axiom in physics, that Bacon and others supposed motion and change of temperature to be one and the same. You cannot, for example, rotate a wheel for a few seconds, without heat being produced, and the iron that binds it becomes expanded; in other words, it exhibits a motion *outwards*: when the same wheel is allowed to stand still, the temperature falls, and the iron hoop decreases in size. There is in that case motion *inwards*. By the same law, if, even in the middle of winter, you run for any length of time, you will become heated; and you again shrink in size when you stand still to cool yourself. To the mind's eye, *extremis probatis media presumuntur*. Having shown the truth in extremes, we presume the rest; for as there are motions both of quickness and slowness that elude the eye, so are there changes of temperature that the thermometer may not reach. Those, then, who ascribe the source of animal heat exclusively to the lungs, seem to have forgotten these facts; they have forgotten that, in the constant mutation of its atoms, every organ, nay, every atom of that organ being ever in motion, must equally contribute to this end; for to this common law of ALL matter, every change in the body is subjected. The powers by which the corporeal motions are influenced, are the same that influence the motions of every kind of matter, namely, the electric, mechanical, and chemical forces, and the force of gravitation. When rightly considered, the whole of these powers resolve themselves into ATTRACTION and REPULSION. It is by attraction that the fluid matter of the blood assumes the solid consistence of an organ; again to pass by repulsion into the fluidity of secretion. *From the earth and to the earth*, the matter composing our bodies comes and goes many times, even in the brief space of our mortal existence. In this, the animal system resembles a great city, the inhabitants of which, in the course of years, are constantly changing, while the same city, like the body, betrays no other outward appearance of change than what

naturally belongs to the PERIODS of its rise, progress, maturity, or tendency to decay.

The last, and one of the most important of the revolutions of the healthy state, is

SLEEP.

Philosophers of all ages have made this an object of their most anxious study, its relation to death, perhaps, being their chief inducement to do so. "Half our days," says Sir Thomas Browne, "we pass in the shadow of the earth, and Sleep, the brother of Death, extracteth a third part of our lives." In the state of perfect sleep, the pupil of the eye will not contract on the approach of light; the skin has no feeling; the ear no sense of hearing; the taste and smell are not to be roused by any of the ordinary stimuli. What is this (figuratively speaking) but a periodic *half-death*: speaking truly, but a periodic palsy or cessation of internal motion of the nerves while we maintain a consciousness of existence, and perceive our relationship to the world around? Broken sleep consists either in brief remissions of the whole sleeping state, or in a wakefulness of one or more of the five senses. There are individuals, for example, who always sleep with their eyes open, and who would see you, were you to enter their chamber with the most noiseless step. These tell you there are always half awake. In the condition of body termed *night-mare*, there is a consciousness of existence with a wakefulness of the nerves of sight or feeling; but with a total inability to influence the voluntary muscles by any efforts of the will. The subject of it can neither sleep nor turn himself. The dreamer,, portions of whose brain think, and therefore act or move, is partially awake. The *somnambulist* and *sleep-talker* are dreamers, who, having portions of the brain in a state of action, and others torpid, perform exploits of deed or word, that bring you a mind of the maniac and the drunkard, whose powers of judging are defective. A man may be entirely awake with the exception of a single member; and this we still refer to a torpid state of some portion of the brain. Such a man will tell you that his arm or leg is asleep or dead. But as this is a soporific subject, and may have a soporific influence on some of you, I may as well wake you up with an anecdote a brother medical officer, of the army once told me of himself: While serving in the East Indies, Dr. C.—one night awoke, or I should rather say half-awoke suddenly, when his hand

at the instant came in contact with a cold animal body. His fears magnifying this into a cobra capel, he called out most lustily, "A snake, a snake!" But before his drowsy domestics had time to appear, he found he had mistaken his own sleeping arm for this most unwelcome of oriental intruders!

Gentlemen, the human body in health is never asleep throughout, for when volition is paralysed—when we are all but dead to everything that connects us with the external world, the heart still continues to beat, the lungs perform their office, and the other internal organs, over which volition has no control, keep on their usual harmony of motion; in other words, the digestion of the food, the circulation of the blood, and the other lesser motions of *organic* life, proceed as in the waking state. The more important motions of the heart and lungs could not cease for many minutes without endangering the entire life in the higher animals; though these organs in the bat, dormouse, and snake, appear to be inactive for months. Nevertheless, even in those animals, they are not entirely so; the wasted state of their bodies, when they wake, proving the movement that had been going on in all the atoms of their various organs during the period of hybernation. The state termed a fainting fit, it is true, comprehends, even in man, a temporary palsy or death of the whole body; but such state prolonged to a very brief period passes into death perpetual. *Catalepsy*, or trance, being a sleep of ALL the organs, internal as well as external, though not of their *atoms*, has a great resemblance to death, as to have been frequently mistaken for it. The subject of this condition of body, by something like the same inexplicable power which enables the dormouse to hybernate, may remain apparently dead for days, and yet recover. More inexplicable, still, if what travellers tell us be true, is the recovery to life of fish, that have been completely frozen for months.

We now pass to the consideration of those alterations of the temperature, and periodic movements of the body, termed

DISEASE OR DISORDER.

Till the hour of sickness comes, how few non-medical persons ever think of a subject which ought to be the interest of all! The same men who discuss with becoming gravity the artificial inflections of a Greek or Latin verb, neglect to inform themselves of the natural laws that govern the motions of their own bodies! No wonder that the world should be so

long kept in darkness in medicine and its mode of action,—no wonder that even educated persons should still know so little of the proper study of mankind—MAN! In the theories of disease, the early priests, as I have already told you, imagined they detected the workings of demons. Medical theorists, on the contrary, attribute them to morbid ingredients in the blood or bowels. One age bowed the knee to an “acrimony” or “putridity;” another acknowledged no cause but a “humor.” The moderns hold the notion that a mysterious process, which they term “inflammation,” is the head and front of all offending. How absurd each and all of these doctrines will appear in the sequel! Disease, Gentlemen, is neither a devil to “cast out,” an acrimony or credulity to be expelled, nor any fanciful chemical goblin to be chemically neutralized;—neither is the state erroneously termed inflammation, so commonly the *cause* as a *coincident part* of general disorder. Disease is an error of action—a greater or less variation in the motion, rest, and revolutions of the different parts of the body—reducible, like the revolutions of Health, into a systematic series of periodic alternations. Whatever be the cause or causes of corporeal aberation, in obedience to the law of all matter, the first effects are change of *motion* and change of *temperature*. The patient accordingly has a feeling of *heat* or *cold*. His muscular movements lessened or the control of their respective influences, become tremulous, spasmodic; or wearied, palsied, the functions of particular muscles cease. The breathing is hurried on slight exertion; or it is maintained slowly and at intervals, and with a long occasional inspiration and expiration—familiar to you all in the act of sighing. The heart is quick, palpitating; or languid, or remittent in its beats; the appetite craving, capricious, or lost. The secretions are either hurried and increased in quantity; or sluggish, or suppressed. The body shows a partial or general waste; or becomes in part or in whole preternaturally tumid and bloated. Alive to the slightest stimulus, the patient is easily impassioned or depressed; his mind, comprehending in its various relations every shade of unreasonable sadness or gaiety, prodigality or cupidity, vacillation or pertinacity, suspicious caution, or too confident security; with every color of imagination, from highly intellectual conception to the dream-like vagaries and reveres of hallucination. His sensations are perceptibly diminished or increased. Light and sound, for example, confuse or distract him; like the soft Sybarite, a ruffled rose-leaf frets him. With the

smallest increase in the medium temperature of the atmosphere, he becomes hot and uncomfortable, and the slightest breeze shivers and discomposes him; or, as you may sometimes observe in the case of extreme age or idiocy, he becomes equally insensible to excess of light, sound, heat, and cold.

Contrast, if you please, these simpler forms of DISEASE with what we have said of HEALTH, and you will at a glance perceive that the difference betwixt the two states consists in mere variation of the sum or amount of particular corporeal motions, in a difference of effect of external agency on the matter and functions of the body. Structural change, or tendency to *decomposition* of any part of the frame, so frequently but erroneously associated with disease as a cause, it is not even a necessary element in a fatal result. What are *Tooth-ache*, *Consumption*, *Rheumatism*, but development of constitutional change?—they are phenomena which may or may not arise out of general corporeal disturbance, according to particular habits and predisposition. By predisposition, I mean the readiness or fitness of one part of the body more than another to be acted upon by influences from without,—occasioned by a weakness in the cohesive power of the atoms of that part to each other. We have all our predispositions. Let us now look into the

CAUSES OF DISEASE.

What are the agencies that give rise to

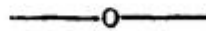
——— “ *Maladies*
 Of ghastly spasms, or racking tortures, qualms
 Of heart-sick agony; FEVERISH kinds,
 Convulsions, epilepsies, fierce catarrhs,
 Intestine stone, and ulcer, colic pangs,
 Demoniac phrenzy, moping meloncholy
 And moonstruck madness, pining atrophy,
 Marasmus, and wide-wasting pestilence,
 Dropsies and asthmas, and joint-racking rheums ?”

MILTON.

Poison and Physic are, in truth, ONE and IDENTICAL, for any earthly agent may become both, by turns, according as it is *used* or *abused*. A German poet rightly observes—

Divide the THUNDER into *single* notes,
 And it is but a lullaby for children;
 But, pour it in *one volume* on the air,
 And the intensity makes Heaven to shake.

The same rule holds good in physic. Everything depends on the scale or degree in which you apply a given substance to the body, and the particular circumstances and condition of the body at the time, whether such substance be a remedy or a poison. What is there that pertains to earth or air, that we may not usefully employ? If man, in his ignorance or depravity, turn a particular power to evil account instead of to good, shall blame be imputed to the Almighty, who bestowed it on him as a boon.



THE ADAPTATION OF FOOD TO CLIMATE.

We have every reason for believing that when our Creator placed man upon this earth, that he also placed such articles of food as were best adapted for his nutrition and support, and that these articles were the spontaneous production of the earth, and also peculiar to the climate in which he was first placed. But at the fall of man, disorganization and confusion followed—and man not only degenerated in a moral, but also in his physical organization. But notwithstanding everything in nature, as regards man, is more or less confused, still there are sufficient data to prove conclusively to every reflecting mind that this world was made for man, and originally to say the least the organization of man was perfectly adapted to the world. When we look abroad among the brute creation, we find each species occupying its peculiar latitude or zone, and subsisting upon the productions of the earth peculiar to that location. Remove those animals to a different zone, and they invariably begin to dwindle away to a greater or less extent just in the proportion to the change we make in their food and climate.

By referring to the History of Animals we shall find each peculiar species occupying a particular or corresponding position upon the earth's surface. So with regard to man, if we travel from the North to the South pole, we perceive almost as much contrast in the human organization, temperament, &c., as in the animal creation. We shall find also that in the extreme Torrid Zones that man and animals subsist almost exclusively on animal food, while we go to the same extreme South, or towards the Torrid Zone we shall find men and ani-

mals subsisting upon vegetables. And to carry the analogy still further, we should find in these parts where men live almost entirely upon animal food, the Frigid Zone most predominant in their organizations; and in the Temperate Zone you will also find a more equal development of all the Zones in their organizations, and as you progress towards the Torrid we shall see less of the animal and more of the intellectual or moral. These broken remarks I have thrown out, leaving it for you to draw your own comparisons and classifications. We may also carry our analysis still further, with regard to the different senses in the same climate—for instance persons in order to enjoy the greatest degree of health in these latitudes, should subsist on animal food in cold weather, and vegetable food in warm weather. And yet we cannot point out any one rule to be followed by all, because all differ more or less in their organizations. Hence man from his peculiar make, will require more animal than vegetable food under all circumstances and *vice versa*. Physiologists have prescribed different dietetic rules, and all to no purpose, for the simple reason that no two individuals are alike in all respects, and so marked is this difference in some cases that what is “meat for the one is poison for the other.” And until men are precisely alike in every respect no one code of rules can be established for all men—with regard to any of their habits.

There is no essential difference in the organization of man and animals, excepting that man is endowed with intellect or reason and allowed a scope or control over all animals, and is governed by these reasoning faculties—while animals are limited to a certain sphere and are governed by circumstances. Different animals are limited to a very few articles of food—while man choose an almost endless variety; but if such a variety of food was intended by our Creator. The domestic animals eat a great variety of articles of food.

Torrid,	Respiration,	Acid,	Red,
Temperate,	Caloric,	Alcoline,	Yellow,
Frigid,	Electricity,	Salt,	Blue,

Torrid Zone in man is the top of the Head, and gives his moral character. In creatures it is the front head that gives fullness and width between the eyes and ears, by this, color, complexion, respiration, &c., is given Acid, Red, and Zone, with this organism, will be large in the frontal head and shoulders, as in the mule, the most gentle horses and cows.

French Merino Sheep, and Bremen Cattle, sweet vegetable food is best adapted to them.

Temperate, Caloric, Alcaline, Yellow, Vital, Liver, Lung, and Stomach Diseases, Yellow Fever, Jaundice, and Yellow Water, Zone lare, the head is rounding to the top, and body large—Food, Vegetation and grain; will eat alcaline ashes to sweeten appetite and to prevent purging from eating grass or imperfect food. We give you these ideas that you may the more readily select the proper medicine to suit the disease, and may lead you to observe the particulars of the several kinds of animals, also the particulars of the different ones.

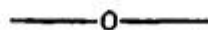
Frigid, Electricity, Salt, Blue; one with this form of head the selfish organs are large, alimentive, thrust, secretiveness, turbulence—Food, Meats, Salts, Exciting Drinks, and such as passionate, irritate, and feverish, are subject to disease of bowels, when in a Southern country. If small, give weak, feeble, and irregular operations from the bowels, like the sheep, goat, mule, camel, and other animals.

The various systems of practice is to suit the different opinions of gentlemen agreeable to their choice and their several circumstances, to be able to obtain the means to suit the diseases of the various animals. In warm seasons of the year in the Southern climates, water is one of the safest and cheapest practices, and if you fail to cure with it, the patient is not materially injured by it; you then may treat it by Homopathic medicine and in harmony with the Hydropathy. In my profession I have adopted the Homopathics, and in my own person have found great relief; but in the treatment of the animal, but little.

I know others who practice it and are always successful; I recommend others to examine it, and see what can be gained by it. All system of practice in examining the diagnosis must be governed, to some extent, by the temperature. I allude to the crono-thermal, the chill, and the fevers.

There are numerous diseases among the several kinds of our domestic animals that arise from exposure to the cold rains, snow, and chilling winds; and the burning sun is the cause of many, as it is shown, these causes have the effect. By stopping the cause the effect would cease. I allude to the many animals confined to high, open fields, to severe chilling winds, and the hot burning sun, instead of being placed in some low grounds along the bushy and shady waters and flowing springs. As I have shown the advantages of springs

to be superior to other water for winter and summer, there is a loss in growth and in diseases that often amounts to ten and twenty per cent. by such unphilosophical practices. I will now call your attention to the zones of the head and body as worthy of our notice, some may profit by it. I hope to see the time when we may learn from it more. I have noticed that such animals are more free from one class of diseases than another, and it was of the peculiar form of vital, lymphatic, or bilious and nervous formations, as a defective form will be more inclined to the diseased part as abided to Alpathy practice. I have practised much and have been cautious of such large doses of medicine, and of late years ceased to take blood, and only adopt it in very peculiar cases. Nor have I had occasion in my long practice to blister any horse. No horse should be ruled or seatoned, if we apply the skill of this age of improvement, strong stimulants superceed them all. Large doses of purgatives often takes away the strength of the animal, and produces diseases itself in place of a cure. It is impossible to give such action on the urine and organs, or sweating; but the proper application of opening the pores will have a three fold effect, it will ease pain, give digestion, and the urine will flow healthily, for the pain is the cause why the general action has suffered. By using the cold water bath and clothing warmly, it will produce perspiration and all the functions of life will be in action. Many other treatments have been pointed out for these diseases. Galvanism and Electricity have been practised on horses to good effect, but rarely applied, as all that is required is to obtain the regular activity of the circulations. I will here remark that I have applied the last discovery of Magnetic or Electrical oil, and it has had a wonderful effect in relieving pain in various parts of the system, and in curing ague or chills, in from one to five minutes in case of man and of lock-jaw in the horse.



WATER-CURE.

All diseases that have the chills will have their fevers and swelling. Bathe with river water not at a less temperature than 60 degrees. In the use of warm bath they will bare it

as high as 180, but this will depend on the condition of the patient, both having the tendency to equalize the temperature and ease the pain, and regulate the circulation. In chills and fevers in man, the shower bath in the latter part of the fevers, cures the chill when the warm water would kill. In chills or inflammation of the lungs of the horse, ten or fifteen buckets of water will regulate them—make the breathing more easy and natural—warm water would often make the case worse. Where there is a want of action on the skin and extremities, cold water, if to ease pain, clean sores, and reduce swelling, it is often that warm is the best. If in bruises of ankles or scratches, foot evils, great and sudden swelling of parts or joints, cold water is the proper remedy. And in cases where the disease is violent, you may add the additional Alpathy medicine, some of the anti-spasmodic camphors, assifidity, sulfate of quinine. You have seen cases in which water is the best and only remedy required, and is often of use in most of the diseases in its place.

Many persons are fearful of losing their horses, and with anxiety give too many kinds and doses of medicine; others neglect to give the animal the attention, and he would often be relieved by the water bath or some other dose. I often given the animal what would be called double practice, as they harmonise. Water on the surface relieves spasms. Internally opium, assifidity, camphor, brandy, &c. It is not necessary to enumerate them.

All things serve and are reserving,
 There is nothing stands alone,
 Wherever the chain ends
 To man it is unknown.

I have seen the different practices of medicine, and it is better for a gentleman to use the water, that is one of the elements of his nature in proper doses, or to take the blood of life or give a dose of opium so large as to put him to wake no more. Horses, cows, and hogs bathe themselves where the water is suited in depth and bottom to bathe it. In treatment, it is all important to use grasses and roots to keep the fluids of the system and digestion active, by as much good grass and tender food as they will eat. Plenty of it gives copious discharges, strength, and flesh by which health triumphs over disease.

List of diseases cured by Water.

Abscesses of neck, body or legs.

Swelling of the legs.
 Burns, and rubbing of gear.
 Fractures.
 Fistulo, cold or hot.
 Pole evil, cold or hot.
 Sprains.
 Swelling of knees.
 Apoplexy.
 Nervous fevers.
 Involuntary closing of the eyes.
 Swelling of the eyes.
 Paralysis.
 Titonus.
 Vertigo.
 Beating of the heart.
 Colic of all kinds.
 Diarrhœa.
 Difficulty of parturation.
 Dynbeatus
 Swelling of the genitals.
 Non-continuance of urine.
 Restraint of wind.
 Spasms of the bladder.

Application by standing them in the water, swimming them, and giving them spirits, and applying wet bandages. Bathing one to four hours at intervals, and one, two, or three times a day, watching the change of the temperature of the body and pulse.

Disease of the liver and spleen.
 Jaundice.
 Hepatites.
 Splenitis.

Fevers.

Fevers attended with chillness.
 Inflammatory fevers.
 Fevers attended with putridity.
 Rheumatic fevers.
 Tuberculous fevers.
 Typhus.
 Fearcy.
 Fatigue.

Diseases of the Feet.

Bruise of the sole.
 Founder, warm and cold.
 Thrush or thrash.
 Wounds of the feet.
 Lameness by prick of nails.

Diseases of Liver, Stomach, and Intestines.

Colic.
 Constipation.
 Diarrhœa.
 Dysentery.

Good spring or well water, when the animal has not worked too hard nor suffered for it. Never drink too much, often too little.

Cause of Aberration in Horses, Cattle, Hogs, Sheep, &c.

Grains give more of the fat and muscles. Grasses or green wheat and barley gives bone and fluid to body—thus you see their importance in fattening animals. If you feed them with the grain plentifully, they will fatten one and sometimes two pounds per day, you then give them plenty of vegetable food that they eat heartily, and you will see the increase to be from fifty to one hundred per cent. ; in the sheep it will often be a hundred per cent. When grass, barley, wheat, rye, &c. are green, it will do ; and the cane-brake will add to the health and growth of them all. If you are raising either of these animals be certain to provide green pastures for the mothers during the winter, as it is of much importance to the old and young. And in all sires, it is recommendable to strong healthy progeny. The importance for health of dam and sire varying, and age will be seen in the various animals. We now allude to such diseases as is caused by the want of the food above alluded to, which may be prevented by giving a plenty of vegetation.

Abortion.
 Depraved appetite.
 Loss of appetite.
 Indigestion.
 Epilepsy.
 Vertigo.
 Swelling and diseases of the bone.

Range.

Constipation.

In the treatment of these diseases in animals, the food is important to accomplish a speedy cure, and where the animals enjoy plenty of it they are seldom sick. The above diseases may have, as I before said, a double treatment, and such means as you may find to suit them (water or other means) may hasten the cure. In the cold countries where the animals are fed on grain and dry hay and straw, they become poor, their eyes express want. Before death you find them with diseased livers. Again in the summer when they have plenty, they become smooth in coat, with eyes bright and lively. If the animals are bred agreeable to the four temperaments, and strong vital organs, and fed properly, and in good shade and shelter, there will be but few sick to nurse; and this is my aim.

Amount of Food required by Animals.

An ox requires two per cent. a day of his live weight, of hay, that is, if the ox weighs 2000 pounds, he requires 40 pounds of hay, if he is working, two and a half per cent. A milch cow should have three per cent. of her weight, as she is proportionably lighter than an ox, and part of the substance of her food goes to form milk. In fattening an ox he may be fed five per cent. All good growing sheep take four per cent.; and growing animals require more food, and it is very poor economy to starve them. Loss of flesh and health is the result with them all; and often part die of disease. The system will be doing good or evil in all cases.

Foundered Horse.

This treatment is more appropriate in warm than in cold weather. A horse was so stiff that he was not able to step more than six inches, and when he attempted to turn would nearly fall. I put him in water knee deep, and kept wet blankets on him nearly all the time, for four hours, and then put him in the stable, and put another blanket over him and left him for a while. If you find him apt to chill, stop the cold application and apply the warm; wet him with stiretus licke as it will stimulate and cool off the fever. After standing some hours, or all night, and when he is sweating, rub him, as it is important to do it two or three times a day, always rub him with the hair. Then lead him a mile, and rest

ten minutes, then back. Then in water again for an hour. Then lead him another mile, then let him stand five or ten hours. Then into water again for one hour—then feed on green food and let him rest all night. The next morning he will be well and travel on his journey. In all cases plenty of good water and green food in it, should be given to the horse at regulars; or ground or scalded grain if the green is not to be had.

To Cure Glanders.

I have lately discovered a remedy to cure the glanders in a horse; sometimes his throat was swollen to a terrible degree; and he could only raise or lower his head four or six inches. What is the glanders? Why it is diseased glands—the little vessels that brings the saliva to the mouth and throat, that are diseased, stopped up and must be opened. What will do it? Tobacco will vomit and may open them. Take half a pound of fine cut tobacco and put it in two quarts of warm water, then wash his throat to his legs and around his ears, and down his throat with a mop. If it makes him very sick bathe him again next morning; after bathing him the second time, put his head to the ground, and he will eat as usual, and be entirely well.



Flies. and Hot Sun.

In its effects on different animals, I have shown their natural qualities to breath hot air, and their colder has its reflection and absorption. The white silver grey, and shining bay sorrel reflects the sun and suffers less than those which absorb it. A glazed hair will not absorb the rays of the sun as fast as a rough one, and it is so in all colors; the smoother and more glossy the hair, the better it reflects the rays of the sun, and the less the animal suffers from it. This also shows strong and healthy circulation, which is all important to su-

perior animals, all other organization being equal. To protect your horse or ass from the sun, cover him with a white sheet of linen as its surface is smoother than cotton. White paper is hard to set on fire with the sun glass, but rub your hand over it and roughen the surface, and it is then easy to burn. This applies to all. The cotton will be of much use, it will shelter them from the sun, flies, gnats, musquetoos with large muzzles of musquetoee cloth, you will shelter them from the buffalo gnat that gets in the nose of the beast. The covering should be large so as to come to the knees and hocks, and cover the thigh. By this I have travelled with one horse alone over the worst prairies without the suffering of the horse and so much kicking, throwing the head round, worrying himself and rider, and protected against the flies and sun. I would recommend this in all cases of insects and sun, with the horse, mule, and oxen, as the best plan to protect them, and prevent the heat. Animals sweat better and have less fever. I do not find it hard to apply to loose, or droves of beasts. All night where the musquetoos are, it is useful to protect them in sleep. The covers should be fastened with a circingle to prevent its getting off, or to one side. You should wash the sheet, and not let it get too dirty and stiff.

I warn you against gumelastic, or any other cover that will prevent the circulation of air, which is dangerous to health.—All extremes are dangerous.

The Plough Horse in Hot Sun.

The white cover is of use to all black horses, to shelter them from the sun. If the fly is numerous it is useful to all. The water he drinks should be clear and cool, as the spring will afford. Young horses that are teething, paw the water and muddy it. They bathe to cool the body. They drink more warm or soft water than they do cool—it requires more to coll the system, often makes them sluggish and weakens the appetite. It is well known, that animals eat the heartiest in cold weather, ice water helps man to eat his dinner. If the weather is warm, an airy stable, is the best. If the horse is in a stable that sweats him, he feeds badly, often sickens, and causes him to eat irregularly, and becomes unhealthy and poor. Horses, mules, and oxen, all perform better by being washed and bathed, when they season is warm, and is also the best manner for cleaning them. If they do not sweat, they should bath to destroy the fever, must sweat freely to pre-

vent his panting and blowing. They should bathe fifteen to thirty minutes in water about seventy degrees, or warmer; in this case, he should not be chilled. In washing the horse to keep him clean, five to ten minutes: In warm weather if the thermometer is eighty or more, the beast to be washed once a day will do more to keep them in order, than any currying or brushing will do, and to prevent the colic, and other diseases. I would have a rope thirty feet long, round his neck; let them loose to wallow, that you may teach them by rolling in the sand or loose dirt to dry the sweat off. In all horse lots there should be loose sand as the place to roll in, and it is sooner cleaned off, than those who have not pastures for them. Use the rope as above, and stake them out, as the grass is so important for health and saving of grain. I have known travellers to start from Missouri, without grain, to go two thousand miles, and arrive at their place of destination with their horses in good order.

DISEASES OF THE FEET.

Contraction, or narrow heels.

It is often that the shoe in drawing the heels causes pain, the pulse beats full and strong, the animal is uneasy in the feet, often raising and replacing the foot, the pain will be increased by a journey, the speed, and the quality of the road, sand, dust or pike road, the softer the better for the horse.

In many instances, the animal goes tripping, flinching, stumbling, and sometimes falls down, causes fevers, and weakens his appetite, his hair is rough, and sometimes spasms into the lock-jaw, and often in travelling they suddenly go lame; the owner thinks that some accident has happened to him, knows nothing of his suffering in the feet. Spasms often follow severe pain in the stomach, face, or eyes. All pain do not produce spasms, some horses are more inclined to that disease than others, some to the disease of the bones, another of colic, another of the skin. Spasms kills by the affection of urine or genitive organs, often the cause is not known when the horse drags his legs with slow movement.

Perspiration is the effects of Circulation.

The healthy perspiration is known by its coming out as

vapour, without color, and is salty, eyes is dry, the animal spritless and quiet—the body not feverish, sweats in drops, cold and clammy, system dull and irritable, weak, digestion feeble. If you see a race horse on the track that appears in fine condition for a race, and as he moves about the course he sweats in drops, and after running a heat he will be cold and clammy, in that situation he will not be able to make a good run, and is very apt to be distanced. Sweating is of great importance to regulate the temperature—it is the medium of the body, as the external heat takes off the sweat too rapid; then the body becomes dry and feverish, and if there is a hot burning sun, and the color is black, the heat may be as high as one hundred and twenty degrees, ten or more degrees higher than fever heat, and will prevent them from performing in the day time. If there be sun shine, and the cover of sheet white, that reflects the sun and prevents the sweat from passing off too soon. It is of great aid and protection to the animal, and will perform much better. The sheet should be light and thin for summer, but for winter, thick and heavy.

Nicking Horses.

I cannot be silent on the nicking horses, make the best of the fashion you may; it is a great outrage to intellect, and degrading our moral standing; a national insult to the American people, who boast of their philanthropy and liberality to be so cruel.

The operation produces the most severe pain to the animal, and in many cases death; the taking off a man's leg produce not half the pain, as all the spinal nerves end in the tail and reach half way to the leg; and the so called intellectual gentlemen can be pleased and proud to see the poor beast shorn of his comforts, suffering by the heinous act of butchery and barbarism; and when well he has lost the means of self-protection against the flies and mosquitoes that sucks his blood.

Is this the age of intelligence and improvement of the nineteenth century, endowed with the blessings of *religious liberty*? they say so—but the North American Indian, without the light of christianity, or the customs of polite society is not half so cruel.

There are many who is aware of the suffering which this act causes, it often results in death. I hope they may learn better. Cruelty is at war with christianity, and let it be

shown in what way they may, the cruelty of the knife is worse than thirst or hunger.

If a gentleman wishes to raise himself in the opinion of his fellow men, I hope he will adopt some other plan, than by his cruelty to the poor dumb beasts of his comforts and the friend that feeds him, clothes him, the means of his pleasure, that bears him from place to place, through wet, cold, and heat. A true intellectual and benevolent man, is merciful to his beast. If you wish the world to believe you when you say you are a christian and often pray for the will of God, who wills the happiness of his creation, by carrying before you to the place of worship such horrid emblems, not of mercy, but of cruelty, more than is practiced by the lion of the desert, committing crime and causing suffering to divert and amuse himself. If we were to see a lion causing his prey to suffer, and the next day, still worrying him, we would say that it must be a very miserable creature, which can be so inconsistent.

I was informed by one of the officers of the U. S. Army, that in 1812 or 13, in crossing the Ohio river, there being no boats, they were compelled to swim the river with their horses, and those that were nicked could not succeed in swimming across, for they would soon tire. I have seen many that was nicked, that the stump (I do not call it tail,) shook with palsy when worked or driven; this is the effects of nicking, which takes away the horse's strength to make a show. There is a law in several states against cruelty to animals, and in Louisiana it is a penitentiary offence for killing a horse, and this act of nicking often kills. If we are compelled to make laws to restrain those that profess christianity from cruelty, they are poor christians, are truly a disgrace to christianity, and degrading to the morals of society. In Philadelphia there is a society who have a hospital to protect the poor beast from starving.

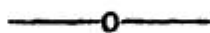
A good and truly religious man, is merciful and has a regard for the life of his beast; he does not muzzle the ox that tramples out his corn, or stints the kid of his mother's milk. The Lord hath spoken to you, and forbids such pride, which is the seed of rebellion, that lost man his paradise. Such pride is like the crab-apple tree, that puts forth beautiful blossoms and perfume, but its fruit is all sour; or like the tall stately oak which allows itself to be embraced by the poisonous vine that kills it.

It is at war with the foundation of the ten command-

ments of God—'Love mercy, deal justly, walk humbly before God' are the very foundation of God's commands.

"The quality of mercy is not strained;
It droppeth as the gentle rain from Heaven
Upon the place beneath. It is *twice* blessed;
It blesses *him* who *gives*, and *him* who *takes*;
'Tis mightiest in the mightiest; it becomes
'The throned monarch better than his crown;
It is an attribute of God himself.

—————We do pray for *mercy*;
And that same *prayer* doth teach us all to render
The *deeds of mercy*."—SHAKESPEARE.



DISEASES OF THE HORSE.

Altering Colts.

I would recommend that colts be two years old before cut, so as to increase the strength of the circulation of blood and gives fuller and better face and more courage, better coat of hair.

In preparing colts for altering, their food should be light for some four or five days, that the quantity of blood should be lessened, and the system less heated, so that there will be less danger of swelling. The less blood taken the better; if the swelling is large it is a sign that the fever is high, and the mattering will not go on in proper time, and as the mattering is lessened the danger is increased, and if the parts do not matter, death is certain. If you can make it matter well, there is less danger. If any searing is used, I would use strong hickory ashes, I know of some that use no other means. The best of wash of alum water will increase the mattering; and the application of honey is found to be the best remedy to reduce the swelling.

Early commencement of Swelling behind the Ears close to the Mane.

If this disease is not sore and hot, it is called pole-evil, and if it does not break, or get worse, let it alone. If sore and hard, apply cold water by a stream falling on it, give arsenic

or quinine in doses to ease the pain. If soft use the knife, open it, and then wash with lime. Zinc solution as a wash, two or more a day. Then to creasefall the wether where the crease is, run a hot iron through the skin, or a rowel of hair on each side of the neck near the mane, take them out as soon as the parts are inflamed, not to remain more than the third day; this will cause them to be creasefallen and is of use in fistulers as they are of the same character but on different parts. Solution of copper, lime, or zinc as a wash two or three times a day, will cure in a short time.

Castration.

Some doses of *arnica* are useful to prevent and stop the traumatic fever which succeeds this operation. It is right also to wash the wound with water to which some drops of tincture of *arnica* have been added. Not only is the cure more expeditious, especially when the lotions are frequently repeated, but the employment of the *arnica* also destroys in the bud several occurrences which sometimes prove dangerous. If fistulæ become developed, we should follow the course traced out under the article FISTALO. Under the fever TETANUS will be found the indication of the treatment to be adopted if that affection should supervene. I have always found *arsenicum*, followed by *sulphur*, useful in treating the tumefaction of the belly which sometimes occurs after the operation.

I was called to see a seven year old horse that had been castrated. He continued to show great pain, hard breathing, eyes watery, pulse rapid, much swelling, no signs of mattering, and very stiff. I commenced bathing the head, and then all the body, and mostly over the loins, and after applying ten buckets of water he was much relieved. I then gave him twenty grains of quinine and in four hours I bathed him with five buckets of water, and moved him to the river and let him stand in water up to his sides, two hours, and the running commenced. I then gave him twenty more grains of quinine. The next morning he was eating, the swelling reduced, bathed him and gave him mash and grass. He soon recovered.

In all cases, if the animal appears in pain, when first cut, bathe him, and give ten to twenty grains of quinine and sps. of camphor to ease the pain and fever.

Contusions.

Contusions are cured in a very short time by the external application of tincture of *arnica* diluted with water. It is only in very bad cases that this medicine should be employed internally. If a bone has been affected along with the soft parts, or if the periosteum has been injured, instead of *arnica*, *ruta graveolens* and *symphytum* should be employed, internally and externally. In some cases *conium* has been found useful.

Thus, when too tight, girthing produces a contusion, the skin gradually becomes exoriated, and, if the matter be neglected, it is not uncommon to see inflammation and supuration come on. *Arnica* never fails to cure lesions of this kind promptly and easily. If tumefaction has manifested itself, and if the swelling, when neglected, become inflamed, and pus be already formed, *mercurius vivus*, or *hepar sulphuris*, disposes it to open, and affects a cure. If crusts or scabs form in the injured part, *thuja* is indicated; its use should be followed by that of *sulphur*.

In the same manner, harness badly made, or ill applied, occasions injuries to the breast, back, and shoulders. There is first observed a blood excoriation, which, when neglected, passes readily into inflammation, and supuration, and is often difficult of cure. *Arnica* given immediately, both internally and externally, soon cures all swellings of this kind. *Asifoetida* alternated with the external employment of *arnica*, is very useful in the treatment of colts which we desire to habituate and accustom to draught, and when sweated from the pressure of the harness. *Bath* and *arsenicum* are employed when the wound suppurates; *alum*, when large crops of pimples become developed on the part; *arsenicum chamomilla*, *lime*, and *sulphur*, when fungus excrescences appear.

Curb.

A swelling is so called that has its seat formed on the sheath of the flexor tendon. It is sometimes occasioned by a blow in leaping over timber, or walls; but the most frequent cause is a strain. The horses most liable to it are those with sickle-shaped hocks, although the best shaped legs and hocks, do not at all times escape. There being generally an undue weight thrown on the parts in breaking, it at first appears insignificant, but generally terminates in lameness. *Arnica*

and sulphate quinine never fail to prove useful, when employed in proper time, and especially when the animal is allowed rest. If on the contrary, he be neglected, pain, swelling, and inflammation increase gradually, and there is formed a hard, cold, indolent tumor. There are cases, however, in which it does not become so considerable, or at least increases but slowly; the horse then continues able to perform his duties, and the lameness which existed at first at length disappears. But when the swelling increases very much, continual lameness supervenes; the motions of the joint, particularly those of flexion, become more and more impeded. When the strain is recent, quinine alternated with salt, and applied externally in the form of a lotion; and when first injured, mixed with boiling water, and applied hot; at the same time give dose of medicine internally; with respect to the treatment of this disease, use standing water to cover the hock, applying oil of cedar as blisters, and *sulphur* must not be overlooked.

Docking.

The operation is sometimes followed by nervous irritation, which, when neglected, may bring on fatal consequences, such as Tetanus. In such cases, then, it is right to administer doses of *arnica*, in order to remove the traumatic fever. In cases (which are not uncommon) where the operation is succeeded by Tetanus, the directions given under that head should be followed. The appearance of gangrene, which has sometimes been observed to occur after the operation, is prevented by the timely use of brandy or whiskey. However, if there be inflammation already, &c., *arnica* is no longer of any use, and we must have recourse to some doses of *asafoetida*. Frequently, more especially when the first incision has been made too high, a fistulous ulcer supervenes, for the treatment of which see the article FISTULA. Some lint, steeped in a diluted tincture of copper, should be bound tightly around the dock, which generally will answer every intention.

Fractures.

It sometimes happens from a fall, or a severe blow, that a greater or less portion of the bones of the ilium become fractured. There then appears in the same place a hot, painful tumor; the horse limps, chiefly at the commencement, and when we view him from behind, we see the affected haunch

lower than the other. This accident is never dangerous in itself. Every time the case is presented to me I have removed it by employing externally the strong tincture of *symphytum*. I also give some drops of this internally from time to time.

Fractures of the ribs are often cured of themselves; they are treated with *bath*. When they are complicated with splinters projecting internally they are liable to produce suppuration of the lung.

Abscesses.

All abscesses, even when they depend on an external cause, having been preceded, or being still accompanied by inflammation, their treatment must be commenced with sulphate of quinine or arsenic ball, to abate the fever and ease the pain. If cold, bathe with warm water. If hot you, may use the cold. If the swelling has been of three days standing, and is soft, open it—none should wait for it to break, and apply at night linseed oil to keep it open and running. The bathing should be three times a day, and if the case requires it, for half an hour at each time. Diet of grass, roots, pumpkins, or mash food. The zinc wash almost always serves to induce suppuration when re-issue cannot be obtained; a dose of it is to be taken every six hours. The means employed in the case of abscesses which have suppurated are: *arsenic*, internally and externally, when the edges are hard and averted, when there is pain, inflammation, and the pus exhales a bad smell; *silecia*, when the pus is thick, and of a bad color.

Every time that certain parts of the body are either burning hot or very cold, we may reckon on it that there is some disease. Heat of the head, ears, and feet, frequently indicate great debility and exhaustion of the animal.

Anticor.

This name is given to a round inflammatory swelling, about the size of the fist, which forms on the chest opposite to the heart. This tumor frequently comes on after exposure to the cold: it then yields to one ounce of sulphur, repeated with antimony, followed by *arnica*. This last remedy is also the one which should be employed, when the swelling is occasioned by a contusion, or any other external cause. Sassafras oil on and inward, acts on the urine organs, and is also useful in the case of a more extensive and general affection of the chest.

Mallanders and Sallanders.

Scurfy eruptions, are so called, seated at the anterior bend of the hock, or at the posterior of the knee, accompanied with oozing, crusts and cracks in the skin, and which is productive of itching, pain, and sometimes even of lameness. This disease is sometimes owing to long travelling on bad roads, want of cleanliness; but for the most part it depends on internal causes. *Baths* and *and tonics* are generally the most useful for it; next come *solution of lime, creosote, and sarsaparilla.* *Sulphur* completes the treatment. If any lameness remain after the disappearance of the exanthemata, we should have recourse to *bath.*

Oedematous Swelling of the Legs.

This is a disease which has its principle seat in the inferior part of the legs, more especially the hind legs, which at times, however, ascends higher up, even to the trunk, and which is also observed in the anterior extremities. It first presents itself in the form of a swelling, which generally lessens by exercise, but always reappears after standing a long time in the stable, and increases very much after some day's rest. The swollen part, which appears a little hot to the touch, occasions to the animal a sense of itching, and an acute pain whenever the part receives pressure, although in other cases, there appears little or no pain. At length, after the swelling has attacked all the posterior part of the pastern-joint, a liquid discharges itself by small pores from the heels which at first is clear, like water, but soon becomes turbid and sanilus, so as to corrode the skin and destroy the roots of the hair. The inflammation and pain then make rapid progress, so much so, that the animal can no longer bear the slightest touch; he limps very much in walking, and when at rest he holds the foot off the ground. A few doses of *antimony* are sometimes sufficient to cure the disease radically, often in a few days, even when it is inveterate. However, when it lasts for some considerable time, the lameness increases very much, and there are frequently developed on the swelling, brownish or bluish excrescences, called grapes, which bleed on the least touch; and continually exhale a fetid ichor, it has now become a case of greasy heel. *Antimony* administered internally, its strong tincture being at the same time employed externally, is useful in this case also. Amongst the other remedies which prove most useful, *arsenicum, asafoetida, and sulphur* are

the principal. *Arsenicum*, has produced excellent effects in a very bad case: the cure was ultimately effected by *mash*, and standing them in water from one to four hours, giving them a better stall or lot to suit their comforts, with marshes and green food until it is relieved.

Phthiriasis; or, Morbus Pedicularis.

Horses which are much used, not kept clean, and badly fed, are frequently much tormented by vermin, which increase very much on their body, and contribute not a little to exhaust them still more when no pains are taken to destroy them. This object is accomplished by means of an ointment prepared with one part of bruised parsley, and three parts of lard, which is spread over the hair of the animal by means of a wisp of straw in the hand. Internally, *sulphur* are given, and if the animal is very weak, *antimony*.

Sweating.

Sometimes the least motion is sufficient to cause a horse to sweat. In several cases I have stopped this infirmity by means of *nux vomica*, *antimony*, and *sulphur*, to each of which I allowed from five to six days to exhaust its action. A friend of mine cured it. Bathing and a change of food has also been ascertained to be very useful in it. Regular and steady exercise, with proper diet, should also be enforced.

Tumor on the Elbow.

A tumor which comes on the point of the elbow generally proceeds from the animal's shoes being in contact with the point of the elbow when lying; in consequence of a fall, a blow, or under the influence of some internal cause. The swelling is, at first, hot and painful; but, by degrees, it is converted into a cold, indolent swelling, which scarcely ever interferes with the hore, but is merely detrimental to the beauty of his shape. In the treatment we should have regard more particularly to the duration of the disease, and to the way in which it was brought on, whether by an internal cause, or some external violence. The affection, when recent, and more especially when occasioned by external violence, is easily cured with *arnica*, with which may be combined the dilute tincture of this medicine. If the disease be of long standing, *chamomilla* must be employed; and if the swellings begin

to grow hard, *antimony*. When of very long standing, or spontaneous, it is in general very difficult to cure. The principal means then are *sulphur*, *antimonium*, *oil of cedar* and *sepia*.

Spavin.

Spavin consists in an inflammation of the ligamentous connection of the head of the small metatarsal with the inner cuneiform bone of the hock, but its position varies considerably; it is followed by ossific deposition, and which interferes more or less with the movements of the hock; the contiguous surfaces being rough and inflamed, the articular cartilages being transformed into bone, &c., although all the horses affected with spavin are not lame, as it is very similar to a splint, when not effecting the motion of the horse. There appears to be in some breeds of horses a predisposition to this affection, perhaps more from the peculiar construction of their hocks, as is the case with curbs. It may arise from strains, particularly in leaping, or from too much exertion being required of horses when young. It seldom appears before the third year, or after the eighth. The diagnosis is generally easy. In order to decide whether a horse is affected with spavin, we must first examine whether there be an enlargement not perceptible on the other hock, on the inner and lower side of the joint. The sprain is sometimes, more especially at the commencement, so small, that we can succeed in distinguishing it only by comparing together the corresponding points of the two legs seen anteriorly and posteriorly; but in time it increases in size, and sometimes attains the size of a hen's egg. When it is osseous to the feel, it constitutes bone spavin, properly so called; if it consist of a soft swelling produced by an effusion of serum into the joint, it is called false spavin. The lameness frequently disappears with work; but if the animal is allowed to rest for a time, and then trotted again, the lameness becomes more perceptible. As an exception to all this, motion increases the lameness in some horses affected with spavin, whilst others are not lame, though they have very large spavins; and others, again, are very lame, though scarcely any trace of the disease is perceivable in them. Besides, we know that the lameness is referable to spavin, increases gradually in consequence of fatigue and work, which may be accounted for by the pains which the animal then feels. With regard to the remedies at

the commencement, we should employ internally and externally, *oil of cedar*.

Splint.

This term is applied to an exostosis of greater or less size, which usually supervenes after a contusion; they are situated, generally, on the inner small metacarpal bones of the fore-legs, although it is frequently seen on the outside, and, at times, on the hind legs. After having existed for some time, they seldom occasion lameness, except they are so situated as to interfere with the action of the ligament, tendons, or the knee joint, or when first forming. I have several times derived benefit in recent exostoses by means of *arnica*, internally and externally. If the tumor is of long standing, there will be some difficulty in making it disappear, and very often we do not succeed in so doing.

Straining of the Tendons.

A strain of the flexor tendons, or of the sheath that envelops them, is generally attended with excessive lameness, and inflammation of the parts; we must assist the animal in resting the injured leg, as much as possible, by means of a high-heeled shoe, as before spoken of in the article "shoulder strain;" give one or two doses of *quinine*, as there is generally constitutional irritation present; we must then have recourse to cold bath, and honey externally; let a tea-spoonful of vinegar and salt be put in a pint of water, a piece of lint saturated therein, and applied round the leg, then let a linen bandage, dipped in vinegar, be lightly rolled around the lint, to keep it in its place: absolute rest is indispensably necessary.

Arnica and *tonics* are also of use if the part is bruised, or if the periosteum is injured, which is frequently the case in bruises of the cannon bone from blows in leaping timber or walls, in which way I have seen the extensor tendon completely divided, and then become again as useful as before with but very slight permanent enlargement, which enlargement, after divisions of tendons, had better not be interfered with. The general practice of stimulants more frequently enlarges than reduces the interstitial deposition.

Sting of Bees.

The Sting of a bee or of a wasp is a circumstance of no consequence. But when a multitude of these insects have fallen on a horse, the pain and inflammatory swelling may go on so as to occasion the animal's death. *Arnica* and *arsenic* employed, of five or ten grains, and if not better in fifteen to twenty minutes, apply brandy or whiskey or honey immediately over the swelling, and it will give ease in twenty minutes. One quart of good liquor may be repeated in thirty minutes.

Colt Distemper.

Bleed at the nose; one quart or two will relieve in two or three days; this can be done in the veins of the face, or gristle of the nose; if you cannot bleed at the nose, bleed at neck, from two to six quarts as soon as the animal is affected, Stop, give him ground food, and, such as is easy to digest; open air if the weather will permit it. Water and food should be put on a level with his body, for the reach of the head inflames the swelling. Repeat the bleeding, if not better in two days.

The cough will be relieved by one ounce of ground mustard, given in wet brand or mash. As soon as the swelling is soft, open it, as it gives ease to the breathing; in some cases it is soft enough to open on the third day, if it be not soft, aid the relief by getting the issue and mattering. The character of this is like the cold and hot stages of disease. If hot, bathe, and if cold, give quinine to warm the vital organs; this should be given in doses, from five to ten grains, repeated in two to four hours. In this case the water he drinks should not be colder than spring-water, given at the level of the body. Their diet should be grass, pumpkins or mashes. I have seen horses that have been stabled, and then turned out to graze, and in one day or less time, their jaws have been swelled round to their ears; this is to show that colts may inflame the disease by grazing. If you raise colts and calves, give them if it be possible, green food for winter, as it is both healthy and cheap. All young stock, pigs, lambs, &c., a small quantity with other food will be of much importance.

Back-Raking.

This process is very useful in cases of fever, costiveness,

colic, and other diseases, in order to favor the operation of purgatives and injections; for in these diseases, the dung in the recutum, or straight gut, becomes dry and hard, to the great inconvenience of the animal, and serious disadvantages as to the operation of medicines. When he has not dunged for some time, and a fulness is perceived about the flank and fundament, back-racking should be attended to, as follows:

Let the operator strip his arm bare, and having well anointed it and his hand with soft soap, lard or butter, preferring the first, the fingers should be brought to a point, and the hand gently introduced into the rectum and draw away the indurated fæces. This should be done several times, and then the animal should be left to himself a short time, while a drink of physic, or an injection, or both, as the case may be, is preparing. This simple process often affords much relief, and it is immediate, which is important in cases of great distress.

The gumelastic bag is the best for the injection—with a pipe of a foot in length with a nob on the end to prevent injury. To give a free and easy discharge from the bowels in a grown horse, it will require four gallons of warm water, with salt or soap oils, and repeat it to suit the case; it often requires three times.

Injuries, &c.

Accidents and various affections are incident to animals, that are not readily perceived; therefore they should be thoroughly examined, occasionally, in every point, especially young animals, and those not generally used, so as to allow of casual inspection, in order to see that no accident has befallen them, or that some affection is not creeping upon them imperceptibly, that will, neglected, become a formidable evil.

It is highly important that animals be timely relieved from accidents, as sometimes a delay will prove fatal, and diseases of every description are far more easily cured when taken in their first stages, than when they have

“Grown with their growth and strengthened with their strength.”

A horse that appeared sick, was examined very attentively for the cause of complaint, and a piece of cob was found across the roof of his mouth, nearly stopping up his throat. This is only one among thousands of instances. There are numerous accidents and complaints with which animals are

afflicted, that may escape the notice of a superficial observer, or that may occur on those animals not generally handled, and by neglect they may increase, from small beginnings, to severe and obstinate disease.

Nails or snags in the feet often causes serious lameness which by early attention would soon be cured.

Holding the Tongue when giving Medicine.

That animals may swallow freely and the medicine go down the right way, their tongues should be free. As a caution on this point, a case was related to us for publication. An ox, after eating hearty, and drinking largely was puffed up. On being worked, the swelling went down. On drinking again at night, the swelling had abated, and the ox was eating hay. The medicine was given by holding his tongue out of his mouth, and pouring the medicine down his throat. He breathed not again, but fell down and died immediately.

On examination, his windpipe, for eight inches in length, was completely filled with chewed hay. It is supposed that on holding the tongue, the windpipe is open, and is liable to receive whatever is poured down the throat; and the reason that no more injury is done in this way, is because the medicines are generally liquid.

Pouring medicine down the throats of animals, with the tongue held, generally occasions coughing, which is doubtless owing to some of it going down the wrong way. The use of those parts connected with the roots of the tongue, which is affected in the natural way.

Mode of giving Liquid Medicine.

Sometimes, when medicines have no nauseous taste, animals will drink them voluntarily. Or if refused in this state, they may be induced to take them in palatable food. But there are numerous cases in which it is necessary to turn the medicine down the throat. Some use a junk bottle for this purpose; a horn is better, as a bottle is liable to be broken. In using a horn, stop up the large end, and pour from the small one, as it is less liable to waste.

The more quietly you handle the horse, the more willingly he takes the dose, but be cautious of holding the head too high, as it naturally produces strangling. The mouth should be little higher than the throat, moving the mouth by the bit, will cause him to move his tongue; and raising and letting the mouth down and up, will cause him to swallow.

Fungus of the Collar.

This name is given to indurations of the skin or cellular tissue, which occur chiefly in parts which are exposed to strong and continued pressure of the harness. *Arsenicum* is a tried remedy in such cases. *Chamomilla* has been chiefly recommended in the treatment of those which are developed in the withers. These excrescences must be sprinkled externally with dilute tincture of *arnica*, and when they begin to put on an unhealthy character, with *arsenicum* (two drops to a spoonful of water.) Sometimes they open: they should then be treated like other abscesses. *Nux-vomica* is useful in the treatment of those fungous excrescences so common to the heel, and also *solution of zinc*.

Apoplexy.

Apoplexy is of two kinds, the serious and sanguinous; the latter is, however, of the most frequent occurrence in the horse. One of the principal causes is high feeding with insufficient exercise; it may also be caused by the animal drawing a heavy load up an inclined plane, although in this case there is, perhaps more frequently rupture of a blood-vessel and hemorrhage from one or both nostrils; if the animal's stomach is overloaded with food, it is more likely to produce congestion of blood on the brain than standing in the hot sun.

The horses most liable to apoplexy are those who have a short and thick neck, are of a dull lazy habit, with a disposition to become fat, and when, on days that are somewhat sultry, they begin to suffer vertigo. A horse in this case carries the head low, the breathing is laborious, the pupils are generally dilated; and the pulse nearly indistinct; there is a frequent flow of saliva; he raises the fore-legs a little more than usual, stumbles as he walks along, chiefly on being turned, falls sometimes, comes again to himself in a few moments. Usually these symptoms are frequent, always becoming more severe, and at length an attack of apoplexy declares itself, in which the animal falls as if struck with lightning, and after some fits of convulsion dies. As soon as the precursory symptoms are perceived, a few doses of *sulphur* are given, which has found a sure means of preventing a fatal termination, especially if the horse be fed moderately, employed properly and not worked too severely during hot weather. *Nux vomica* and *antimony* may also be used in the premonitory symptoms with good effect, also *murr* and *opium*.

Nervous Fever.

Bathing to relieve the heat—ten or twenty buckets thrown on, or standing from one to four hours. This affection appears but rarely, probably even never, as a nervous affection from the commencement; it precedes, in general, inflammatory or catarrhal fever, is frequently associated with other febrile states, and occasionally degenerates into a true putrid fever; so that whatever is to be said of the latter, is equally applicable, in a great measure to it. Like putrid fever, it has for its characters, great depressing, total prostration of strength, disposition to convulsions, frequent grinding of the teeth, and complete insensibility. The febrile paroxysms usually occur in the evening. Frequently the disease reigns exzootically, and causes great havoc. The principal remedy to be employed is *water* and *quinine*, repeated twice every day. *Arsenic* and *antimony* alternately with *sulphur*, was found very effectual in a case where there was short and frequent cough with tightness in the chest. *Nux vomica*, *quinine*, and *belladonna* have also succeeded. Those affected had a very dry cough, the respiration was difficult, the mucous membranes generally inflamed, a serious discharge from the nose, great depression, and but little appetite. First a dose of *quinine* was given, then usually after the expiration of ten hours, *bathing*. When the disease had diminished considerably, at the end of two days, *sulphur* and *lime-water* were given, according to symptoms; the patients were cured in general on the sixth or seventh day. When there was gastric complication, loaded tongue, swelling of the abdomen, obstinate constipation, alvine evacuations unhealthy, and much thirst, the treatment was commenced with *nux vomica*, which was repeated frequently two or three times in the space of two days, after which, a dose of *crude antimony* in general sufficed to effect the cure. In some of the affected individuals there was a sort of vertiginous stupor; insensible to the impressions from without; they remained with the head hanging down or resting on some place, without paying any attention when called, as if asleep, and it is not without difficulty they could be drawn from their stupor, or the inconvenient position which they assumed; in those cases *bathing* and *mash* was administered, and repeated two or three times if the somnolence did not give way. In general, they were convalescent at the end of from six to ten days. Those more dangerously affected were the horses which scarcely ever remained at rest, with small hard pulse, violent movements of the ab-

dominal muscles, nostrils very much dilated, profuse yellowish thick discharge from the nose, pulsations of the heart unequal, and the color of the skin very changeable. A dose of *Assi-foetida* was given to them at first, then *veratrum*, and in some cases *camphora*; in them it was of great importance to establish the functions of the skin and abdominal organs. Only two patients died, but they had been neglected, and the treatment too long deferred.

Involuntary Closing of the Eye-lids.

Bathing is the remedy to be employed in the spasmodic closing of the eye-lids, which is observed sometimes in cases of periodical ophthalmia; it is frequently met with, however, as an isolated symptom. *Chammomilla* has been useful in a case where *quinine* and *arsenic*, had produced no effect.

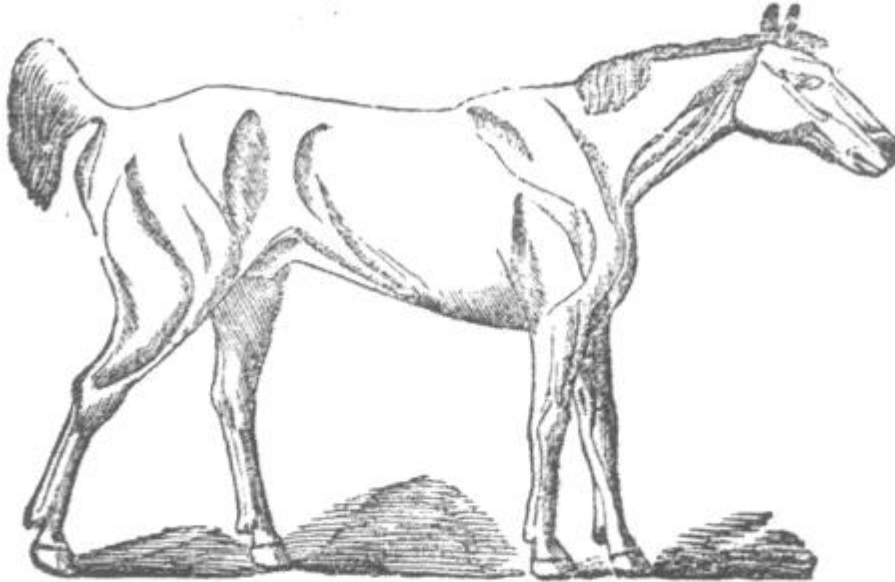
Swelling of the Eyes.

Prominence or projection of the eyes out of their orbits is a common consequence or accompaniment of weeping. I have found *stramonium* useful in a case where there was a sort of periodical swelling of the eye-lids; I first prescribed a dose of *sulphur*. *Ignatia* and *chamomilla* are recommended in the treatment of swelling of the eye-lids; the former in that of the upper lid, the second in that of the lower. *Sepia* and *sulphur* have also been found effectual in a great many cases. If there be lachrymation at the same time, *quinine* and *water* may be employed with advantage.

Weakness of Syncope.

After profuse nasal hemorrhages, after a wound which has occasioned heavy loss of blood, incomplete syncope sometimes supervenes; the horse, being very feeble, totters and trembles; he is covered with a cold sweat, and sinks down sometimes; but when stretched on the ground, he still moves his limbs and soon revives. A dose of *quinine* or *nux vomica* here produces the best effects. When the same phenomenon comes on after excessive labor, which has been carried beyond the animal's strength, and he has received little or no nourishment. However there are cases wherein complete syncope is observed in the horse, which after having tottered a little, falls to the ground deprived of consciousness, as it were dead, remaining stretched without moving, without con-

vulsions, with cold ears and feet. Under such circumstances *brandy* has been several times of great benefit. When on falling the horse becomes convulsed, this is an attack of epilepsy.



To cure the common Tetanus.

Tetanus is an extremely dangerous disease, observed more particularly in horses than any other domestic animals. It consists in a peculiar spasm of the muscles of the jaws, and often too of the entire body. The jaws are so completely closed, than one might break them rather than separate them one from the other. At the onset of the disease, which always commences with slight symptoms of colic and constipation, with moving of the tail, the animal feels some difficulty in opening the mouth; by degrees the ears become rigid, the eyes are widely opened and distorted, the neck is rigid and immovable; spasm soon seizes the entire body; the animal becomes rigid in every part; the muscles are hard, the respiration is hurried and loud, and the animal's body is covered with a cold sweat; his body, in fact, seems as if he was a wooden horse. No power can then succeed in opening the mouth; the nose forms a hard cone; the horse, almost incapable of making the least movement, remains standing, his legs very much separated, and at length dies between the eighth and tenth day. But the disease does not always commence with trismus of the jaws; it often begins with spasm of the muscles of the posterior region, which extends gradually to the anterior parts of the body, and which attains its extreme degree when the jaws are closed. The first case

happens when during the moist and cloudy weather, the animal has been wounded in a very sensitive part, more especially in the joints and in the foot. The second is observed when the horse, otherwise predisposed, has been subjected to great cold after being very much heated. But there is no doubt that many other causes also contribute to produce this disease, which, for the most part, attacks well-bred horses, and which in general is not recognized, except when it has made considerable progress. The efforts of allopathy have hitherto had but little success. Homoeopathy has been more fortunate. *Nux vomica* has proved very efficacious. It is administered in repeated doses, at first several times a day, then every two or three days. If only rigidity remain in the limbs, *arsenicum* is prescribed, after which it is right almost always to refer to *nux vomica*. In some cases where the animal had not recovered appetite, benefit has been obtained from *ipecacuanha*.

Bathe him in twenty buckets of water, but if you can bathe him in a river it is better; then give him one quart of good brandy in three quarts of water—the raw spirits burns the mouth and requires adulteration—and if he gets supple by the spirits as he begins to sweat, it is a sign of the relieving of the disease. After that has relieved him and he seems to be over the effects of the spirits, if he is hot give him a deep bath, repeat it in an hour; then give him some 10 or 20 grains of quinine, but they should be small doses, and given each hour. It would be better to watch the chilly and hot stage of the horse, and to make him comfortable in all cases. This treatment will relieve the chill in thirty minutes, and in some cases I have relieved them in ten minutes. It acted like electricity on the horse, before he got back to the stable he opened his mouth. I also relieved a jack by the same process. I will relate a case which a gentleman that was engaged in buying and selling horses told me of a case that had been running on for five days; he at length gave him up and turned him out to die. During the night there was a heavy fall of rain, and the next morning he went to see where he had died, and to his astonishment, when he went to where he was, the horse nickered to him for food, and soon got entirely well. Gentlemen, I warn you against too much warm clothing, for many use double the quantity that is necessary; do not use gumelastic nor any other air-tight dress, thin cotton or linen will do for summer, and in winter, thick twilled cotton is preferable for blankets, as it turns the rain better. Air is essential to health.

After running, a horse became so stiff during the night, that he could scarcely move a single step. On examining him I found him affected with tetanus; his neck was tense, and the legs, more especially the hind legs, very much separated; the back, on the middle of which a circumscribed, painful tumor was observed, formed a straight line; the tail hung a little to the right. The muscular parts affected with tetanic contraction, were rigid and very hard to the touch, more especially those of the back, thighs and flanks, less so, however, than those of the legs and neck. If the animal was obliged to move, he did so with extraordinary rigidity, and if an attempt was made to trot him, perspiration soon manifested itself, with hurried respiration. At the same time there was redness of the nasal mucuous membrane and of the conjunctiva; pulse a little full, but not very frequent; respiration painful and hurried with dilation of the nostrils; skin tense and dry; and animal rarely evacuated; the evacuations were small and dry. A favorable circumstance was that there was not yet a trismus of the jaws, or at least that it was not much marked, for the animal was still able to chew his hay without difficulty when cut, and to swallow it readily; he also retained a moderate appetite; he had run the day before in the midst of heavy rain with a north-east wind. On the afternoon of the same day, I observed short contractions in the flanks, similar to those which might be produced by galvanic shocks, a circumstance which appeared to me a good omen, by inducing me to hope a favorable reaction of the vital force. Towards evening a mild and uniform perspiration took place over the entire body; it lasted however but a short time, and the animal became dry, whilst being rubbed. On the following day, the general state seemed improved; the respiration was not accompanied with such violent efforts; the muscles of the flanks and back were no longer so rigid, but the voluntary motion of the thighs was not yet effected without considerable difficulty; there had been a copious discharge of a pulverulent appearance, and frequent alvine evacuations. The same dose repeated. Two days after, considerable diminution of all the symptoms; relaxation of all the muscles which had been affected with spasm; the animal feels more facility in turning the neck and moving the legs, which now diverge less during standing; breathing almost natural; pulse full and regular; not more than forty-five per minute; appetite good. From this time up to three days after, during which period two doses more of *nux vomica* were administered, the improvement progressed with incredi-

ble rapidity, without the least relapse, so that at the end of six days the animal was perfectly cured.

I have shown you that the front-head was the form that gave the breast, and that combativeness and strength gave length to the body, and full strong loins and thighs. In this disease the part most affected is at the joining of the head to the neck, and running to the hind foot. I saw a case that was affected severely, the farrier applied bags of ice to the head of the horse, and relieved the jaws by it; but not applying tonics to regain his appetite and strength, he lost the horse. Ice or brandy may be applied to the head, but remember where there is a wound, however small, even where it is bled, to apply sulphate of copper, oil of vitriol, or something to get up the matter of the sore, for then the animal may be partially relieved, if this fails you will be apt to lose the patient. Warm or cold water will relieve the foot, and then brandy will be of use to cure the patient. One cause of this disease is want of circulation, but do not bleed the patient as it is the blood that is required to keep him alive; other causes are numerous, wounds of various kinds, contraction of the shoes, pressing on a sensitive part of the foot, or the throg of the foot being too prominent and pressing on the ground, extreme heat or cold, over-work and running, is often the cause, and after one or two days sometimes kill many.

Cough.

Cough is a common symptom in different diseases, for instance, in broken wind, strangles, pneumonia, bronchitis, &c. In such cases it disappears under the influence of the treatment suited to the general morbid state. But this does not always take place, and occasionally the cough continues after the principal disease has been cured, and degenerates into a chronic state without any discoverable disease. When the cough is not complicated with any other affection of the lungs, the chief means to be adopted are the following: *mustard*, if it has supervened after a cold; *quinine* alternately with *sulphur*, if it require much effort, and cuts the respiration short.

Colic.

Colic, a disease common in the horse, is sometimes dangerous, in consequence of its rapid course, but generally yields very readily to remedies. By leading them into cold water

deep enough to cover them or by pouring it on the back, and in fifteen or twenty minutes taking them out and walking them a short time and repeating the bathing, you have the best means of getting a passage from the bowels. It is often the case that the urine organs needs water-melon seeds or spirits of nitre or quinine to relieve the spasms of the neck and bladder, and sometimes spirits of camphor, either of the above gives immediate relief. In fifteen years practice, I have not known water to fail to cure in any case. The causes which produce it are very various; costiveness, and influence of cold, oats oftener than grasses, overloading of the stomach, and drinking very warm or cold water whilst heated, food of bad quality, flatulen and unusual, excessive toil, continued far beyond the time for feeding, being out during a violent storm, worms, &c. We even see horses to which a small portion of a certain kind of food never fails to give colic, though it may not injure others. Finally, we sometimes observe a species of chronic colic, connected with some internal and deeply-seated disease, most frequently of a poisonous nature.

Among the general symptoms of colic, the following are more especially characteristic. The animal refuses his food he beats or paws the ground with his fore-feet, raises the hind-feet towards his belly, frequently looks at his flanks, his tail frequently quivers, the feet are generally close together, and the animal frequently throws himself on the ground, rolls about or places himself on his back, presses his legs up to his body, remains for some time in this situation, and suddenly rises himself again; the symptoms of colic then return, sometimes in the midst of mourns and groans, and in some cases with perspirations over the entire body. Under other circumstances, one of the flanks or belly is swollen, though occasionally the horse, especially at the onset of the attack, passes his urine and foeces, which, notwithstanding the urgent desire he feels, he is not always able to do. Usually there are moments of relaxation, during which the animal remains standing or lying, and even eats some of his food; but the pains soon return with increased intensity. The longer it lasts the more the horse's countenance bespeaks the acuteness of his sufferings; the nostrils are dilated, the respiration hurried, he grinds his teeth, bites the manger, shakes his halter, becomes furious, and dies in a cold sweat, often in a few hours, rarely after a struggle of several days. Bathing will soon invite the heat to the surface; the more internal the fevers the colder the skin. It is so with cases of mortification of

the vital organs, the heat may be aided by laudanum, peppermint, or alkaline.

The treatment is always to commence with a dose of *alkaline* or *spirits of nitre*, which is to be repeated once or twice, according to circumstances; this relieves the first violence of the attack, and occasionally, more especially in colic from cold is sufficient to triumph over the disease. If this result be not obtained at the end of a quarter of an hour after the third dose of *aconitum*, a dose of *arsenicum* should be given, the chief remedy in those especially termed flatulent, when they depend on disturbance of digestion, on excess of food, or of bad quality, or on drinking or eating. Very frequently the repetition of this remedy is of great use, whilst in other cases we shall find it best to alternate it with *alkaline*, for when the stomach is sour it soon sweetens it. If after the colic has ceased, constipation remain, *nux vomica* should be given, and in obstinate cases *opium*; after which, should it fail, which is no uncommon occurrence, we must have recourse to *asafoetida*. Colic is rather frequently accompanied with retention of urine or it has even been occasioned by it; *water-melon seed* are then indicated, and in obstinate cases *spirits of camphor* always succeeds.

Colic from Constipation.

Colic from constipation is frequently produced either by unwholesome food, or by the impression of cold. In this disease the symptoms common to the different species of colic are carried to rather a high degree, and in a great number of cases, there is also added the tympanitic state of the abdomen. However we may consider as symptoms which characterize them, the efforts of the animal to free itself from the foecal matters, and the nature of those it happens to expel. As in general there is inflammation and disturbance of digestion, the first thing to be done is to administer water, by bathing or pouring, to cool the fever and reduce the pulse; as soon as the system becomes chilly he is relieved, and then blanket him, and be sure to rub them well with the hair down, also the use of injections of tepid water should not be lost sight of. After these means have in some degree calmed the first attack, if no dejections have as yet come on, *nux vomica* should be employed, when the dung is in small lumps, hard and compact; *opium* when it is blackish, and, as it were, burnt, with a black color of the tongue, the poor animal lying

extended on the ground, as if he were dead ; *laudanum*, *assifoetida*, *soap*, or *alkaline*, in obstinate cases, when the rectum is empty, the animal remains a long time tranquil, and the attacks of colic not very acute, and longer intervals supervene between the attacks.

Colic from Cold.

This disease resembles, to a certain extent, windy colic, with respect to its symptoms ; but it differs from it chiefly in this, that the abdomen of the animal is but slightly enlarged, or not at all so, and also that the accessions, instead of being continued, manifest themselves by spasmodic paroxysms. The animal frequently starts, then lies down, remains for some time without moving, rolls himself, raises himself suddenly, and places himself very frequently in the attitude of discharging his urine or foeces, but without being able to succeed. All at once a calm is re-established, the pains cease for ten or fifteen minutes, they then return with an increased severity, and the horse is lost if relief be not brought very soon. *Anti-spasmodic camphor* will relieve the urine organs; *assifoetida*, five buckets of water and blankets, will open the pores of the skin. *Assifoetida* in doses repeated every ten minutes is possessed of an indisputable specific power. Bath or buckets of water, two ounces of *laudanum* is good in all cases ; commence and repeat the dose by giving from two ounces up to eighteen.

Flatulent, or Windy Colic.

Colic in general, and windy colic in particular, are among the diseases most frequently met with in horses. The symptoms are generally known ; the horse ceases to eat, he scrapes with his feet, frequently looks at his flanks, carries his hind feet towards them, whisks the tail, throws himself on the ground, brings up his legs close to his body, strives to roll himself, but soon stands up, and recommences the same series of movements ; at first he dungs and passes urine ; but in a short time he can no longer do so, notwithstanding all his efforts ; the belly swells ; the eye is open wide ; the fixed look denotes the intense pain, the respiration is very much hurried, the nostrils are widely dilated, and perspiration often inundates the entire body. Sometimes there are intervals without pain, during which the animal becomes calm, and strives even to eat ; but the pain soon returns with increased se-

verity; the feet and surface of the body become more and more cold; at length the animal dies in the midst of a cold sweat, and with all the symptoms of frenzy, usually at the end of from twelve to thirty-six hours; sometimes however in the short space of a few hours; the struggles seldom lasts long if relief is not obtained.

The occasional causes of the disease are somewhat numerous: most frequently it depends on overloading the stomach; or else it is the consequence of bad food, especially that which is damp, or musty food, as clover, &c., which the animal has eaten greedily. A dose of asifoedity, repeated if necessary, removes the inflammatory state, which is predominant in such cases, and frequently there is no necessity for anything else, as the disease will disappear in half an hour, especially when it has been brought on by cold. After aconitum, that which is most suitable is arsenicum, which almost dissipates the entire symptoms with the utmost promptitude. Nux vomica and opium are, in general, infallible means for removing the obstinate constipation occasioned by windy colic, which disappears the moment this constipation ceases. However, this does not always happen; and in obstinate cases, sulphur mash has constantly been found useful.

Colic (Verminous.)

Collections of worms in the intestines occasion sometimes symptoms which bear a great analogy to the attacks of colic, or perfectly resemble them; for the horse strikes with his tail, raises his hind feet towards the belly, throws himself on the ground, rolls himself, rises up, and then eats as usual. But we cannot consider it as certain that such attacks are owing to worms, unless we have had some other means of ascertaining the existence of these. A dry cough is a usual attendant, with an unthrifty looking coat, and, in general, shaking after drinking. The animal affected with worms often moves his tail to the right and left, he strives to rub his hind part, and particularly the end of the tail against different objects; he frequently licks the walls, and rubs his upper lip; he has continual rumbling in his bowels, and his dung, at first a little liquid, is generally very foetid. After antimony, we should employ in such cases, nux vomica.

Diarrhoea.

The most prominent causes of diarrhoea or long continu-

ance on unwholesome food, brackish or mineral waters, undue purgation from different medicaments, verminous affections, and in some horses habituated to close hot stables, the change of temperature will induce it. Horses that are light-hearted and of a nervous disposition are the most susceptible to it; anything that irritates or inflames the stomach and intestines are likely to induce super-purgation and spirits of nitre.

Treatment.—If caused by worms, we must administer *sulphur*, and *nux vomica*. The medicaments that are found most useful in the various kinds of diarrhoea are *aconitum napellus*, *arsenicum album*, *boyonia*, *carbo vegetabilis*, *pulsatilla*, *colocynthis*, *murcurious*, *nux vomica*, *ipecacuanha*, *sulphur*, &c. If there are feverish symptoms, and in warm weather, we administer cold water; if the foeces smell offensive, with approaching putridity, and if resulting from change of temperature, particularly from heat to cold, *laudanum*.

Enteritis.

Inflammation of the intestines bears, with respect to its symptoms, a close resemblance to spasmodic colic, from which, however, it may be distinguished. In colic there is generally a remission of symptoms, and the pulse varies, being at times natural, at others small and feeble, then full and quick, whereas in enteritis it is hard and quick, and as the disease advance, the pulse still rises to double the number of beats, or even more, and there is no remission of pain, although it appears at times more severe, but the horse gradually gets worse until speedy relief is obtained. The animal refuses to eat, but there is great thirst, and the respiration, which is accelerated, is accompanied with beating of the flanks. The eyes are red and starting, mouth hot, the extremities sometime hot and sometimes cold. The animal has the back arched, frequently looks at the abdomen, which is tense and painful, he scrapes with his feet, rolls himself on the ground, starts up with a frightened air, stamps with the fore feet, strikes the abdomen with hind feet, and is very sensitive to the slightest touch. At first he voids from time to time a small quantity of foeces; in a little time he passes nothing from the bowels. When the disease has lasted for some time, and an apparent calm comes on, during which time the animal's legs and feet become deadly cold, and the eyes, which were before depicted with anxiety, now becomes sunken, and the pulse imperceptible, it is a proof that the inflammation

has degenerated into gangrene, and that death is not far off. *Water* is one of the chief remedies; *laudanum* is to be administered every ten or fifteen minutes, until a perfect cure is established, or at least until a perceptible change for the better has taken place. In general, the animal is saved at the end of half an hour. If the continued employment of *laudanum* has not removed all the symptoms after from two to three hours, *arsenicum* should be given, which is more especially indicated when the disease has been produced by cold drinks taken when the animal has been sweating, or by some irregularity of regimen. Spirits of camphor and *arnica* have succeeded in other cases.

Indigestion.

Great irregularity in regimen and exposure to cold is very frequently the cause of this affection, horses laboring under indigestion have a staring coat and an unhealthy appearance. Attacks of indigestion are particularly common in voracious animals, which are made to work immediately after taking food. When the stomach alone is affected, we observe embarrassment in the breathing, and dislike to food. This is the case for employing *antimonium* and *matter injections*. *Ipecacuanha*, which is to be followed by *asenic* and *mash*, at the end of about an hour, is also very useful. When the indigestion is carried to an extreme degree, the animal is found to be very restless, he holds the head down very much, keeps at a great distance from the manger, frequently strikes with his fore-feet, and almost always sweat is oozing from him; the alvine evacuations are dry and mixed with undigested oats. This state differs from colic in the animal not being anxious to lie down. The principle remedies are: *ipe-cacuanha*, which is useful in almost all affections of the abdomen: *nux vomica* when there is loss of appetite; constipation, and the foeces consist of small lumps; *oil of sassafras* in the case of watery stools unattended with pain: *asafortida*, if the digestions are liquid and fetid; *antimonium crudum*, in case large feculent lumps are voided, with aversion to food; *chamomilla* when there is diarrhoea, with swelling of the belly

Abortion.

Mares in foal are exposed to abort, when they are worked too hard, or when they are ridden without sufficient caution.

Abortion is also occasionally the result of a fall, blow, etc. In the latter case *arnica* must be given at once to prevent it, as also green food, if there have been luxation.

Mares are very sensitive to the effects of the sight and smell of blood; it will frequently cause abortion. Fish will, by being carried on them, or beef hides, or by giving them salt, cause abortion. The feeding of mares, cows, sheep, and sows, that are fed on corn or other grain, that have but little green food or hay often miscarry. I have seen in bad winters when animals got but very little, that some lost four and five colts, others lost calves, colts, lambs and pigs. All who raises them should prepare by cain-braik, wild grass, or barley wheat, rye, or winter oats. I find it to be the best manner of raising winter pigs, and all young stock and young poultry in spring. By this management you will seldom lose one; and the loss is more common before you are warned by the symptoms. The bath and the quinine is the best remedies as tonics. I will observe that in all cases of hogs and horses, that *nux vomica* will cure it. I will not use nor recommend breeders to use arsenic.

Painful and bloody Urine.

The presence of a calculus in the bladder can only be discovered by examining this viscus per rectum, which under such circumstances is often found to be enormously distended, so as frequently to burst. The symptoms are in general those which are met in cystitis. Frequent voiding of urine, occasioned by the irritation of the calculus, sometimes with great difficulty, at other times completely suppressed, the urine is thick and whitish, and on standing a short time deposits a sediment, at other times it is tinged with blood; the horse is at times attacked with spasms, and groans with pain, frequently hitting his sheath with his hind feet, &c. The inflammation requires the employment of spirit of camphor quinine, or in getting a passage, black pepper on the end of pences; or if a mare, pepper on a sliced onion. Watermelon seed, and oil of sassafras are useful. Such diseases as spasms, treat them as such, and always watch close the thermole tremel, the hot and cold stage. It is better to let the symptoms of fever remain, than to lose strength, for the cold stage is death; and it is more difficult to raise the pulse than to reduce it.

Diabetes.

This disease owes its origin to various causes, such as change of food, of water, the frequent use of medicines given as diuretics, &c. It may be temporary, arising from nervous excitement, or permanent, from existing a long time, and caused by an altered secretion from a long continuance of unwholesome food, or abuse of medicine.

The medicines most useful in this disease are camphor, nuxvomica, sulphur-water, and barley food.

Pain of Kidneys from Pressure.

Like all lesions occasioned by prolonged pressure, the affection of kidneys never fails to yield in a very short time to external treatment with *arnica* water, more especially when during this treatment the horse is no longer ridden. But in cases where the affection is of very long standing, a few days are often sufficient to bring about a cure. *Antimony* is an excellent remedy against contusions of the spine and withers; bathing, when there is a hot and tense swelling in the ribs. When the tumors developed on the bone are not hot to the touch. When they have passed into the chronic state, *conium* almost always is of service.

Spasm of the Bladder.

This affection consists in a spasmodic contraction of the sphincter of the bladder, which renders the passing of the urine impossible. It is often observed after cold, when the horses pass the night out of the stable, or as a secondary symptom in colic; it has also been frequently observed after a day's hunting. The animal evinces great uneasiness; he is tormented as much almost as in fits of colic, scrapes, throws himself on the ground, stands up again after some minutes, and often strains to pass urine, but ineffectually. Occasionally the abdomen is swollen, and in the dissection of horses, the spleen is frequently found considerably enlarged, (hypertrophied,) sometimes it has been found to weigh upwards of fifteen pounds. There are also cases on record of rupture of the viscus; the symptoms resemble those of gripes, and has been mistaken for the latter by observant practitioners; the death of the animal generally takes place in eighteen or twenty hours after the symptoms are observed. On examining the rectum, we find that the bladder is very much dis-

tended. Cold bath, dose of quinine and black pepper, are then proper in most cases; however, *camphor* deserves the preference when the animal has passed the night out of the stable. Water-melon seed is an excellent remedy in case of strangury. *Opium* also produces very good results, especially when there are intervals of rest between the pains, the pulse being small and scarcely perceptible, the animal sad, and as it were asleep. It is stated that *camphor* has been found useful in the case of heat and full pulse, and *rosin* in that of cold in the extremities.

DISEASES OF THE LIVER AND SPLEEN.

Jaundice.

This affection, which is not very common in horses, is recognized by the yellow color of the conjunctiva, inner surface of the lips, and the interior of the mouth. It is in the generality of cases symptomatic of acute or chronic hepatitis, is generally accompanied with fever; the serum of the blood and urine are of a yellow tinge. It is usually accompanied with great debility, the appetite fails, the evacuations have a yellow tinge, but are more frequently clay colored.

Causes are bad shade in the field, and poor water to drink or bathe in. The principle remedies are: *quinine*, *nux vomica*, *mercurius vivus sulphur*, *asafoetida*, *nitre*, *allum*, and a bath of from one of two hours' duration. Their food should be water-melons, pumpkins, and mashes. Give them good shade in the day time, and let them out to graze at night.

DISEASES OF THE MOUTH.

Carbuncle on the Tongue.

This disease, which is very uncommon in the horse, but is extremely contagious, takes place when in typhus the miasm is thrown on the tongue, so that this organ is covered with small vesicles full of a turbid fluid, or when there supervenes a small pimple surrounded by a bluish circle. The vesicles bust and fill the mouth with a fetid ichor, which corrodes the tongue to a considerable depth; the tumefaction of this latter organ goes on increasing; corroding ulcers are soon produced,

and the organ becoming gangrenous, is detached in distinct portions; death generally supervenes at the end of from twenty to thirty hours.

I had a drove of eighty-five horses and young mules; I bled many, and gave them half an ounce of allum and lopus, and in two days they were all well.

Biting.

This is either the consequence of natural ferocity, or a habit acquired from the foolish and teasing play of grooms and stable-boys. When a horse is tickled and pinched by thoughtless and mischievous youths, he will first pretend to bite his tormentors; by degrees he will proceed farther, and actually bite them; and very soon after that, he will be the first to challenge to the combat, and without provocation will seize some opportunity to gripe the incautious groom; and then, as the love of mischief is a propensity too easily acquired, this war, half playful and half in earnest, will become habitual to him, and will degenerate into absolute viciousness. Nothing can here be done in the way of cure; kindness would aggravate the evil, and no degree of severity will correct it. Prevention, however, is in the power of every proprietor of horses. While he insists on gentle and humane treatment of his cattle, he should systematically forbid this horse-play. It is that which can never be considered as operating as a reward, and thereby rendering the horse tractable; nor does it increase the affection of the animal for his groom, because he is annoyed and irritated by being thus incessantly teased. He may be taught better by putting him in a close place and letting him be watered and fed from your hand, not full but half allowance, by a new master and home. If this fails, stake him out by a rope twenty feet long, so that he cannot get at you or run away, and take a long whip and apply it to his hips, back, and belly, and sometimes on the back, belly, and hips.

Then when he will come to you be kind to his face, then if he is not quiet, give him six more stripes.

Getting the Cheek of the Bit into the Mouth.

Some horses that are disposed to be mischievous try to do this, and are very expert at it. They soon find what advantage it gives them over the driver, who by this manoeuvre loses almost all command. Harsh treatment is here com-

pletely out of the question. All that can be done, is, by some mechanical contrivance, to render the thing difficult or impossible, and may be managed by fastening a round piece of leather on the inside of the cheek of the bit. By having large rings attached to the cheeks, you can prevent them from getting hold of them.

Vicious to Clean.

It would scarcely be believed to what an extent this exists in some horses, that are otherwise perfectly quiet. It is only at great hazard that they can be cleaned at all. The origin of this is probably some maltreatment. There is a great difference in the sensibility of the skin in different horses. Some seem as if they could be scarcely made to feel the whip; others cannot bear a fly to alight on them without an expression of annoyance. In young horses the skin is peculiarly delicate. If they have been curried with a broken comb, or hardly rubbed with an uneven brush, the recollection of the torture they have felt makes them impatient, and even vicious, during every succeeding operation of the kind. Many grooms, likewise, seem to delight in producing these exhibitions of uneasiness and vice; although, when they are carried a little too far, and to the hazard of the limbs of the groom, the animals that have been almost tutored into these expressions of irritation, are brutally kicked and punished.

This, however, is a vice which may be conquered. If the animal be dressed with a lighter hand, and wisped rather than brushed, and the places where the skin is most sensitive be avoided as much as thorough cleanliness will allow, the horse will gradually lose the recollection of former ill-treatment, and become tractable and quiet.

It is better in cleaning them, to curry and rub them with the hair, as it has a powerful effect on the circulations, that makes them sore; my head is now very sore by turning the hair back. I believe the animal is better dirty than rubbed against the hair. The health of the horse is much improved by rubbing him all over with the hand.

Swallowing without Grinding.

Some greedy horses swallow their corn without properly grinding it, and the power of digestion not being adequate to the dissolving of the husk, no nutriment is extracted, and the oats are voided whole. This is particularly the case when

horses of unequal appetite feed from the same manger. The greedy one, in his eagerness to get more than his share, bolts a portion of his corn whole. If the farmer can, without considerable inconvenience, so manage it that every horse shall have his separate division of the manger, the horse of smaller appetite and slower feed would have the opportunity of grinding at his leisure, without the fear of his share being stolen from him by his neighbor.

The cause is the teeth, in some the jaw-teeth should be rasped of the irregular edges and eides, as the rasp is easily applied. In some the front-teeth are too long for the grinders, in this case you should cut them down with a rasp.

Cutting.

Of this habit we have already spoken, and we would advise the owner of a cutting horse, without trying any previous experiment of raising or lowering the heels, to put on the cutting foot a shoe of even thickness from heel to toe, not projecting in the slightest degree the crust, and the crust itself being rasped a little above the quarters; and to let that shoe be fastened as usual on the outside, but with only one nail on the inside, and that almost close to the toe. The principle on which the shoe acts, has been explained.

It may be remedied by leather being put between the foot and shoe, and letting its edge extend out half an inch as a defender.

Not Lying Down.

It not uncommonly happens that a horse will seldom or never lie down in the stable. He sometimes continues in apparent good health, and feeds and works well; but generally his legs swell, or he becomes fatigued sooner than another horse. If it is impossible to let him loose in the stable, or to put him into a spare box, we know not what is to be done. No means, gentle or cruel; will force him to lie down. The secret is that he is tied up, and either has never dared to lie down through fear of the confinement of the halter, or he has been cast in the night, and severely injured. If he can be suffered to range the stable or have a comfortable box, in which he may be loose, he will usually lie down the first night. Some few horses, however, will lie down in the stable, and not in a

loose box. A fresh, well-made bed will generally tempt the tired horse to lie down.

Give him a box to himself, but do not halter him, and give him plenty of bedding; try him by different kinds of bedding, such as straw, saw-dust, leaves, &c.

Pawing.

Shackles are the only remedy, with side lines sufficiently long to enable the horse to shift his posture, or move in his stall; but even these must be taken off at night, otherwise the animal will seldom lie down.

The cause of this is the uneasy place and irregular stall, which is so narrow that he cannot be comfortable. Many horses contrive to back that they may get their feet more level, so as not to strain the hind part of the legs. The box or stall will allow them to be more easy.

Quidding.

A horse will sometimes, partly chew his hay, and suffer it to drop from his mouth. If this does not proceed from irregular teeth, which it will be the business of the veterinary surgeon to rasp down, it will be found to be connected with sore-throat, and then the horse will exhibit some other symptom of indisposition, and the swallowing of water will be accompanied by a peculiar gulping effort. In this case the disease (catarrh, with sore throat) must be attacked and the quidding will cease.

If it be sore-throat, quinine may be given, from ten grains to sixty. Ten grains for a dose.

Tripping.

He must be a skilful practitioner or a mere pretender who promises to remedy this habit. If it arises from a heavy forehead, and the fore-legs being too much forward the horse, no one can alter the natural frame of the beast: if it proceeds from tenderness of the foot, grogginess, or old lameness, these ailments are seldom cured; and if it is to be traced to habitual carelessness and idleness, no whipping will arouse the drone. A known stumbler should never be ridden, or driven alone, by any one who values his safety or his life. A tight hand, or a strong bearing-rein are precautions that should not be neglected, but they are generally of little avail; for the

inveterate stumbler will rarely try to save himself, and this tight rein may sooner and farther precipitate the rider. If, after a trip, the horse suddenly starts forward, and endeavors to break into a canter, the rider or driver may be assured that others before him had fruitlessly endeavored to remedy the nuisance.

The causes of stumbling may be from natural want of nerves of eyes, as already shown, but this rarely causes them to fall. The defect of seeing is the cause of ten falling to one of the natural defect. You seldom see them in their natural pastures fall down. If you will examine the character of the horse (if his organization be good) and find him stumbling, you will then say it is the effect of shoes.

Weaving.

This consists in a motion of the head, neck, and body, from side to side, like the shuttle of a weaver passing through the web, and hence the name which is given to this incessant and peculiar action. It indicates an impatient, irritable temper, and a dislike to the confinement of the stable; and a horse that is thus incessantly on the fret will seldom carry flesh, or be safe to ride or drive. Turn them loose in stall.

It is caused by confinement and the want of regular exercise in narrow stalls, that he cannot change his attitude of standing nor turning around. The narrow stall and elevated fore-feet, will often produce string-halt. All habits that is not the habits of the horse in the pasture is the effect of bad management. It may be that you are not aware of your duty to the animal. Natural law calls for self-preservation.

Wild Look.

Wildness of look is a symptom occurring in different diseases, and one which merits serious attention every time it is carried to an extreme degree. *Bathing, opium, mash, and arsenicum* are then indicated, under the head of fever remedies, which are to associate with those required by the general state of the animal affected.

Mange.

The horse's itch, similar to that in the human subject, consists in an eruption which comes out on the back, loins, but-

tocks, shoulders, thighs, &c. Feeding on dry food is the principle cause of this disease. It has often been cured by giving them green food and corn. It always depends on an internal affection (*psora*), and extends with great facility by contagion. The eruption on the skin does not constitute the disease itself; it is only a product or result of it. A purely local treatment is unsuitable, and should therefore be rejected. When *psora*, which has its root within the system, external integuments, it produces there a vast number of small, very itchy pimples, which oblige the animal to rub himself incessantly, and a fluid oozes from them, which soon becomes dry on exposure to the air, and form a scab. The latter resolves itself into furfuraceous scales, so that the part affected becomes covered with a dirty powder, and the hair thus matted is raised and becomes erect. Besides, there are frequently produced small ulcers, which increase in depth, destroy the roots of the hair, and cause intolerable itching. This is what is called *moist itch*, which yields to a dose of *tincture sulphuris* applied to the skin, and *sassafras pill*; if there be only itchy pimples and scabs, they are soon cured with *arsenic*, succeeded in a little time by *sulphur*. But, independantly of this moist itch, there is another, called the *dry itch*, consisting in small pimples which desquamate, so that the part of the skin affected seems as it were covered with a fainaceous powder. The itching is frequently so severe as to deprive the horse of appetite, and not to allow him a moment's rest at night. Here a dose of *sulphur* and *assifoedita* is almost specific.

Warts on Horses and Mules.

Twenty-one grains of *nux vomica*, not repeated more than once in fifteen days, but repeated until cured.

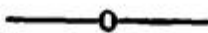
This case I know to be true. A young lady had a wart on her finger which was very painful; many remedies were applied, but without avail. At length, the following preparation was prescribed: cranberries boiled down, then a poultise for two days. It soon became well, and has been for many years in excellent health.

Cure for Stoppage of Urine.

If it is a horse, apply fine pulverized black pepper on the end of the penis. If a mare, an injection in cold or tepid water.

Cure of Hives in Horses.

Pulverized blood-root, one drachm. Lobelia, one drachm. Composition, two drachms. To be given in soft food three times a day.



A G E S .

*The Two Year Old Colt.*

The above cut deserves attention, as giving an accurate representation of the nippers in the lower jaw of a two year old colt.

*Three Years.*

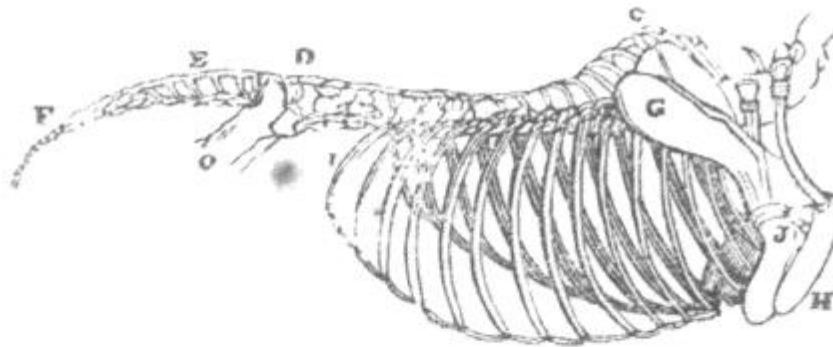
The central teeth are larger than the others, with two grooves in the outer convex surface, and the mark is long,

narrow, deep, and black, not having attained their full growth, they are rather lower than the others. The mark on the two next nippers is nearly worn out, and it is wearing away in the corner ones. This mouth represents two and a half; shows no change until the third year old.



Six Years.

At six years the mark on the central nippers is worn out; there will still be a difference of color in the centre of the teeth. The cement filling the hollow, made by the dipping in of the enamel, will present a browner hue than the other part of the tooth, and it will be evidently surrounded by an edge of enamel. Persons not much accustomed to horses have been puzzled here; they expected to find a plain surface of a uniform color, and knew not what conclusion to draw when there was both discoloration and irregularity.



This represents an important item, that the bones continue until seven years old; after seven it is but rare you see a horse splint-spavin, or any other disease of the bone; for this reason I am unwilling to put the young horse in service as

soon as many do. You may know the age of the horse by the rib; at four years old the first rib, at the hip, becomes farther apart, at five another, and so on until seven.

The age of the horse after ten is shown below the eye, at eleven one rinkle, at twelve two, until fifteen years old; at that age the hair on the outer edge of the ear is off, often, but not in all cases, at fifteen the ears of some going forward, the opening is rather backward, and the bone of the lower jaw becomes sharp, and at ten the fundament is turned inside out when he dungs. I find this subject hard to speak positive on, but the most correponding proof I decide, I rarely then miss more than one year, unless the horse be over fifteen years old.

Teeth.

In some horses the jaw teeth cuts the side of the lips and tongue, which causes them to get sore, and they are compelled to swallow their food without grinding it well, and the grain comes through them whole; such will not fatten. The grain swells and produces colic. This is easy to cure by the use of the rasp;* put it in his mouth and run it over the teeth, he will allow you to file it down. The instrument is six inches long, the handle is eighteen, making it two feet in length. I can have them made in Cincinnatti for one dollar; this is one of the most important instruments used by the Farrier. It is the cause of some horses not turning to the side the lips are sore, and makes some go sidelong in harness, and often causes them to hold the bit in one side of the teeth. This is easy remedied, and many require it to be done.

Horses that are not allowed to feed on grass, but on hard grain, the fore teeth grows so long, as to prevent them from grinding their food; have the fore teeth shortened by the rasp, which may be done by gagging the mouth.

* See cut, fig. 3, on the following page.

Fig. 1.

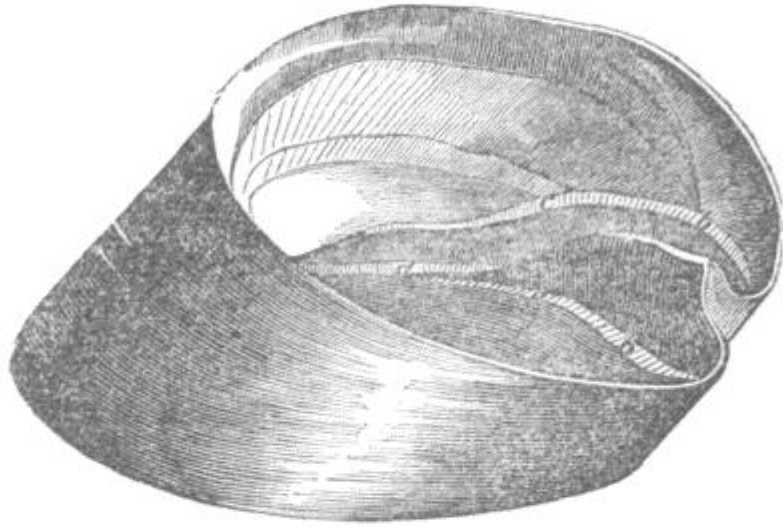


Fig. 2.

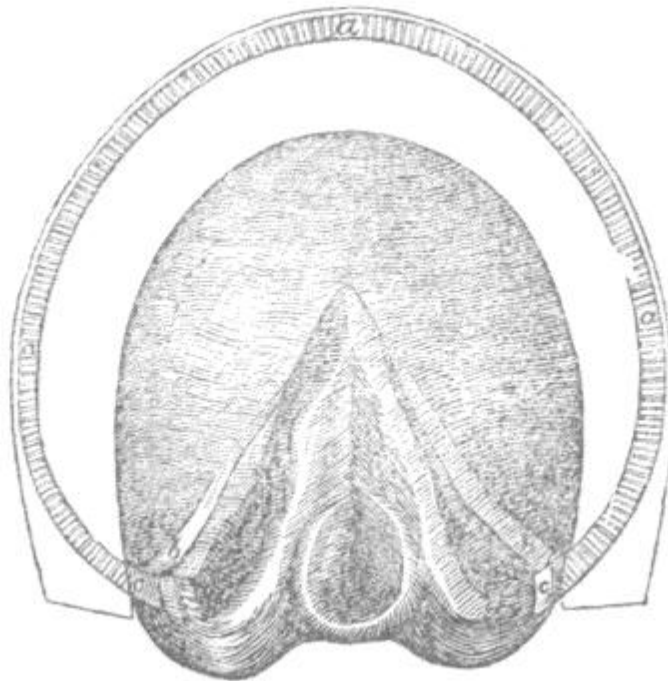


Fig. 3.



The Hoof.

The effect of this squeezing of the sensible sole is most commonly witnessed at the angle of the inner heel, where the descending heel of the coffin bone forcibly pressing the vascular sole upon the horny sole, ruptures a small blood-vessel, and produces what is called a corn, but which is in fact, a bruise. If we carefully observe the form and size of the frog in the foot of a colt from four to five years old, and as its shoeings are repeated, we shall become convinced that a visible departure from a state of health, and nature is taking place; at first it will be found large and full, with considerable elasticity, the oval in form open, and expanding, with a continuous, well defined, and somewhat elevated boundary, the rine at the heels fully developed, plump and rounded, and the whole mass occupying about one-fifth of the circumference of the foot; by degrees the fulness and elasticity will shrink and lose their plumpness, the clefts will become narrower, its oval form disappear, the back part of its boundary give way, and it will dwindle into a narrow crack, extended between the wasted parts, presenting only the miserable remains of a frog, such as may be seen in the feet of most horses long accustomed to be shod.* This dwindling down to one-half its proper size is the direct effect of shoeing, and pairing. The reason assigned for further mutilating this fast diminishing organ at every shoeing, is a most unfounded dread that it would run all over the foot, if it were not for the controlling influence of the drawing knife. Mr. M. writes, I have a horse in my possession whose frogs have not been touched by a knife for five years, and yet it has never occurred to any one, that they are overgrown, but every one is attracted by the evenness of surface, and fine expanded cleft which they present. Perhaps about one in a thousand may form an exception, where a large, loose tissue frog may require a little pairing once or twice in a year.

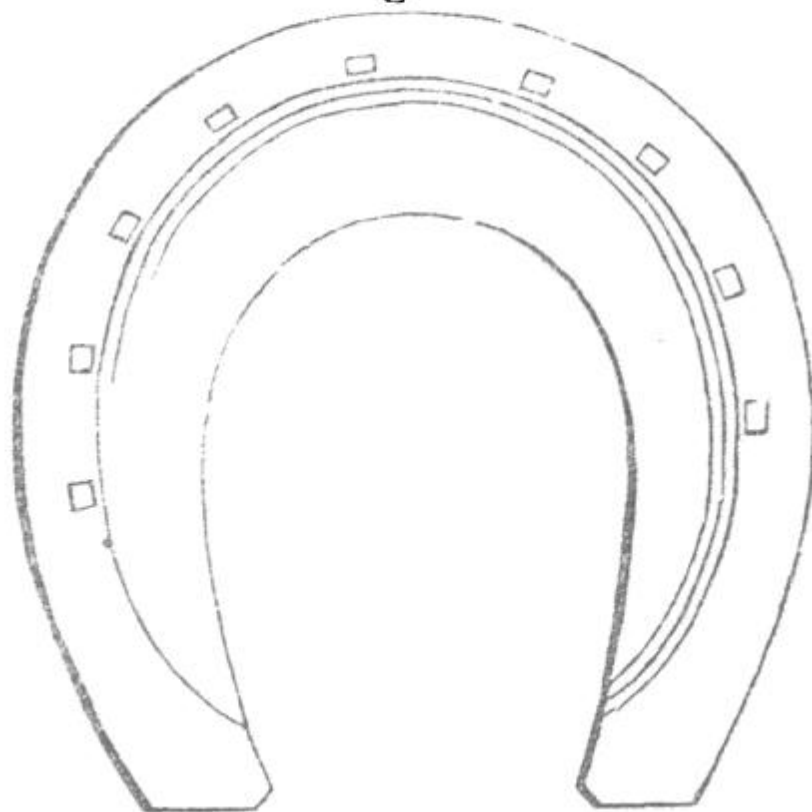
FIG. 2, shows the foot ready to receive the shoe, and the part on which it should press, and not on any other, nor let the shoe come out as the marks represent, as is commonly practised, but let its shape be to suit the foot, for all re-shaping, as shown above, injures the horse and his motion.

The edge of the shoe every where to the edge of the crust; to level the shoe you may heat it only as hot as to burn it to

See fig. 1, page 213.

lay smooth, but a good smith with good tools, will not need this aid. The shoe you see is cupped in a similar manner as the foot, to keep free of any other pressure but the rine and horny part of the foot; this is to be carefully done if the horses foot is flat, for often it causes lameness. I am not in favor of more weight on the foot than is necessary to support the strength of the horse, this is surely fashion, for it is not the better judgment; if many of the shoes were used as a lupe-ring all the strength of the horse could not open it; it is but rare you see a horse that needs shoes to weigh more than a pound, the strain is greater on a fast horse than a slow one. I am opposed to toes and corks, if any use for either, it would be on the ice, then short and sharp, one set to prevent the foot slipping sideways, the other back or forward.

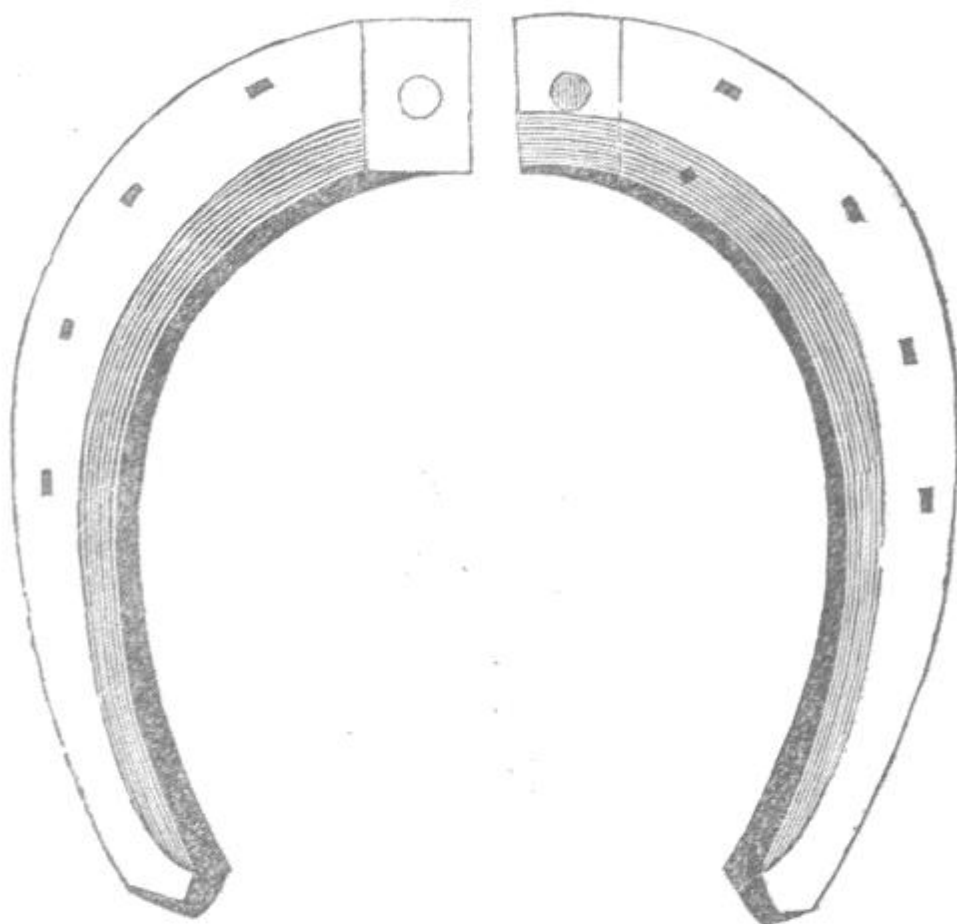
Fig. 4.



The shoe when nailed on will press only on the rine of the foot, as shown in the plate of the natural foot, fig. 2, the shoe will fit so smooth as to hold water, and the inside of the shoe will be one-fourth to a half inch from the bottom of the foot. I am opposed to the practice of cutting out the bottom of toe foot any more than necessity compels, for large feet are better than small ones; in all cases their heels are trimmed to make them look well, I had rather splice on the foot leather than cut the heel as much as practised, for the foot

should always stand at an elevation of 45 deg. to cause the ligaments of the front and back of the leg to press equally when standing. The elevation of horses in stalls will not omit the easy manner of standing, it is the cause of lameness. In Philadelphia I found the head much elevated, and I found more string halted horses there than in any other place during my travels; this I believe to be the cause; I want my horse to stand as level as possible.

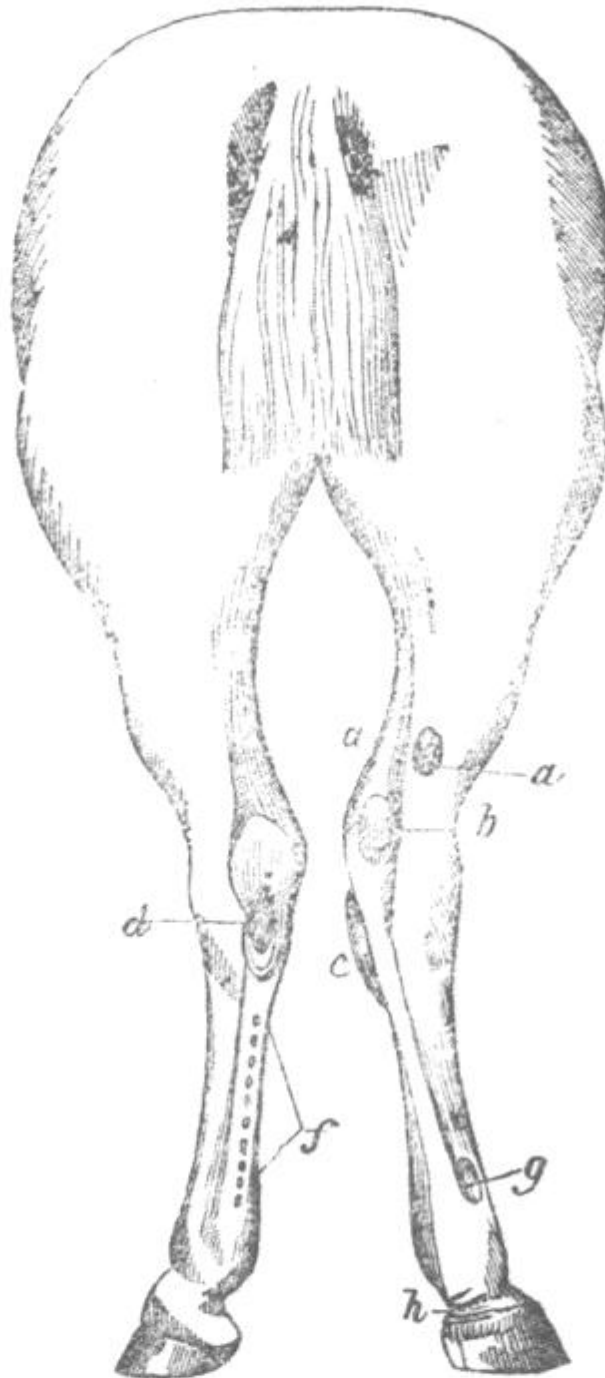
Fig. 5.



Narrow and contracted heels (see fig. 1.) I believe to be the cause of more stiffness, rocking or short steps than any sweany in the shoulders, and it is the cause of more lameness than any other disease known in the United States. I would recommend those who have not bad and rocky roads not to shoe their horses. I have in long journeys of from one to two thousand miles, in several cases, had my horse to perform better if shod. This you contracted by the shoe by a slow process; to cure it, first shoe the horse with a shoe of half a pound, let the nails come as far back as will hold them, place the jaws of the blacksmith's tongs between the heels of the shoe and stretch it one-fourth to half an inch as the size of the foot may require, repeat this once in six or seven days.

You should wet the foot as often as possible, and use soft grease, and linseed oil.

The best rule to go by is the width of the hind foot, you may stretch it as wide, for nature forms the fore foot largest. If the contraction has not been but for a short time, the cure will be effected in from one to five days, but if for a year or more, a longer time will be required, and some may not be cured at all. I cure forty-nine out of fifty.



Defects of the Hind Legs.

I here show you that you should be cautious of all horses of which the hocks are lumped, or in any way diseased. For

dislocation of the stifle joint the best remedy is to swim them, this will rarely fail to bring the bone to its place. Then let them remain quiet and do not move them more than necessary until they are perfectly recovered. In the above cut, *a* shows the wind gall, this may be relieved by any strong astringent decoction, as tan bark, rubbing the part upward; *b* is an enlargement of the hock, it is difficult of removal, the best remedy is oil of cedar; *c* is called bone-spavin, this is an enlargement on the bone of the leg, it is hard to remove, but may sometimes be done, on its first appearance, by repeated blisterings; *d* is the curb or letting down of the nerves of the leg, caused by a strain, the best remedy is by blistering or burning, but is sure radically to injure the horse; *f* shows diseased nerves, all enlargement of that portion of the leg should be guarded against as dangerous in the extreme; *g* represents an enlargement of the bone, this is incurable, but if the horse is old it will not make him lame, if he is under six year old it is dangerous; *h* represents the ring bone, this is a bony substance coming on the frontal portion of the pasteur joint; I have treated of the cure in another place.

I would warn all to beware of horses having any appearance of these diseases, as they will more or less injure the horse forever. Take no ones word in regard to any of those appearances but go by your own judgment.

(See Fig. 5, page 216.)

To prevent Contraction of the Foot.

This shoe will serve to show the design. It is to be riveted together, and must be a good fit, yet permit it to move the toes of the horse that is contracted, half an inch, as they wear off faster than others, because the heels is numbed for want of more circulation in the parts, but it is best to preserve his motion, and smooth, well-leveled shoes will this put on. A young horse will retain his action and seldom stumble, and rarely become sprung in the knees that destroys tens of thousands.

Sprung Knees.

It draws the heels together until the ligament of the back of the legs loses its proper circulation and lively action; the animal then uses the front ligament, as you may see by looking at the hoofs, and you will find the toe of the shoe worn; this then bows or extends, strength is then lost, and the animal is ruined. I would urge you to watch his shoes, and his

motions before it is too late. This is not the case in horses not shod. I recommend to your consideration the use of the jointed shoe, as it cannot contract the fore foot more than the hind one, and is rarely affected.

Twenty-five to thirty-five is the age that is common to the horse on farms by good treatment.

Hide Bound.

In this disease the horse appears dull, and his skin is tight on his bones. It is caused from want of water and food. Bleed and give sassafras or spice-wood tea in mashes. Slipplery-elm, green and rich food, tonics, are also good in this disease.

Lampers.

Is caused by feeding on corn, and want of cooling food; horses never have it on grass. When it hurts, the horse rubs his tail. Cured by green food, and scarrifying the bars of the mouth, but lightly. Never burn, it is useless and cruel.

Poison known as Milk Sickness.

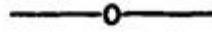
Caused by wild food, sometimes the horse will not complain until exercised; do not exercise him, but sweat freely for four days as much as he can bear, and all is well. Poisons of other kinds, horses seem to vomit. I am at a loss for a cure, but would recommend sweating, nux vomica, and arsenic.



The Coon.

For amusement, and showing the disposition of the coon, and it is the case with many other animals, that when their young or company is in distress to endeavor to relieve them, or escape from danger. If a coon is in the ground or in the hole of a tree where he lives, he is then safe. If on a tree go forty or fifty yards off, and commence fighting with the dogs, and imitate the squall of the coon with your mouth, and strike the ground with brush; he will then endeavor to escape as best he can.

INTERMARRIAGE AND CROSSING OF ANIMALS.



The anatomical and physiological knowledge necessary to the understanding of this book, is comprised in this page and the two following ones. It is merely a brief view of a Natural System of Anatomy and Physiology,—the former describing the particular structures or organs of animals, and the latter the actions or functions of these organs—drawn from the first account given of such a system, which was published by me, above thirty years ago, in several elementary works, and especially in *Preliminary Lectures* with expositions of the errors of Bichat, Richerand, &c.

According to that system, the human body and that of the higher animals consist of four classes of organs and functions, namely :

1st. The *Locomotive* organs and functions, consisting of bones, which support the body and its parts; ligaments, which connect the bones together and form the joints; and muscles or bundles of red flesh, which move these.—Together, these form an apparatus of *levers*, which exercise large and *conspicuous motion*, and of which the *limbs* are chiefly composed. It is by means of this apparatus, that all motions of the higher animals from one place to another are accomplished.

2dly. The *Vital Nutritive* organs and functions, consisting of lacteals, fine tubular vessels, which absorb nutritious matter from the blood taken into the intestines, and carry it towards the heart, to be converted into blood; blood-vessels which circulate the blood thus formed; and various glands or filters, which secrete or deposit, not only the various substances composing the different organs, but the fat, the milk, hair, wool, and other animal products. All of these consist of *tubes*, which exercise only a minute peristaltic or *pulsating motion*, and of which the *trunk* of the body is the centre and principal seat. It is by means of this apparatus, that not only nutrition and secretion are effected, but that useless matters are removed and thrown out of the body.

3dly. The *Mental* or *Thinking* organs and functions, consisting of the immediate organs of sense, the eye, ear, &c., which receive impressions from external bodies; a brain, which perceives, compares, reflects, &c.; and a cerebal or little brain, situated below the back part of the greater brain, and above the neck, which wills, and consequently throws the muscles into those actions which fulfil its purposes. All of these consist of series of *globules*, bound by membranous investments, into fibres of various forms, of which the *motion* is *invisible*, and which chiefly occupy the *head*. It is by means of this apparatus that sense, thought, and the impulses to action, and consequently all connexion with external objects, take place.

4thly. The *Nervous Temperament*, or that in which the brain and the nerves predominate in activity, gives clearness of perception; quickness of mind and body; susceptibility to excitement, with less power and endurance. Signs: light, fine, and thin hair; a thin, clear, delicate skin; smaller frame; head relatively large; small chest; rapid, but not hard or strong pulse; motion and action is given by the nerves.

I regard Dr. Walker as the most learned Physiologist of the day, and lay down this system to compare with him as a Physiologist. He has not given a knowledge of the nervous system in full detail, but alludes to it as a cerebal, which wills and consequently throws the muscles into those actions which fulfils its purpose. Nerves is all the senses, brain, will and pulse.

I have given four classes of the Natural Arrangements of the organs of Anatomy, and in all classes of them the nervous temperament.

Natural Arrangement of Organs—Anatomy.

CLASS I.

LOCOMOTIVE ORGANS.

<i>Order I.</i>	<i>Order II.</i>	<i>Order III.</i>	<i>Order IV.</i>
Bones, or Organs of Support.	Ligaments, or Organs of Connexion.	Muscles, or Organs of Absorption.	Nerves, or Organs of Motion.

CLASS II.

VITAL ORGANS.

<i>Order I.</i>	<i>Order II.</i>	<i>Order III.</i>	<i>Order IV.</i>
Nerves, or Organs of Motion.	Lymphatic, or Organs of Absorption.	Veins, Arteries, or Organs of Circulation.	Glands, or Organs of Secretions.

CLASS III.

MENTAL ORGANS.

<i>Order I.</i>	<i>Order II.</i>	<i>Order III.</i>	<i>Order IV.</i>
Eye, Ear, &c. or Organs of Sensation.	Cerebrum, or Organs of Perception.	Cerebellum, or Organs of Respiration.	Nerves, or Organs of Motion.

*Nerves.*Organs of
Reproduction.*Veins and Arteries.*Organs of
Digestion.Organs of
Respiration.*Natural Arrangement of Functions—Physiology.*

CLASS I.

LOCOMOTIVE FUNCTIONS.

<i>Order I.</i>	<i>Order II.</i>	<i>Order III.</i>	<i>Order IV.</i>
Function of Support.	Function of Connexion.	Function of Absorption.	Function of Motion.

CLASS II.

VITAL FUNCTIONS.

<i>Order I.</i>	<i>Order II.</i>	<i>Order III.</i>	<i>Order IV.</i>
Function of Absorption.	Function of Circulation.	Function of Secretion.	Function of Pulsation.

CLASS III.

MENTAL FUNCTIONS.

<i>Order I.</i>	<i>Order II.</i>	<i>Order III.</i>	<i>Order IV.</i>
Diseases of Sensation.	Diseases of Perception.	Diseases of Reflection.	Diseases of Volition.

<i>Passage of Blood to Lungs.</i>		<i>Passage of Blood from Lungs.</i>
Function of Digestion.	Function of Respiration.	Function of Secretion.

Natural Arrangement of Diseases—Pathology.

CLASS I

LOCOMOTIVE FUNCTIONS.

<i>Order I.</i>	<i>Order II.</i>	<i>Order III.</i>	<i>Order IV.</i>
Diseases of Support.	Diseases of Connexion.	Diseases of Absorption.	Diseases of Motion.

CLASS II.

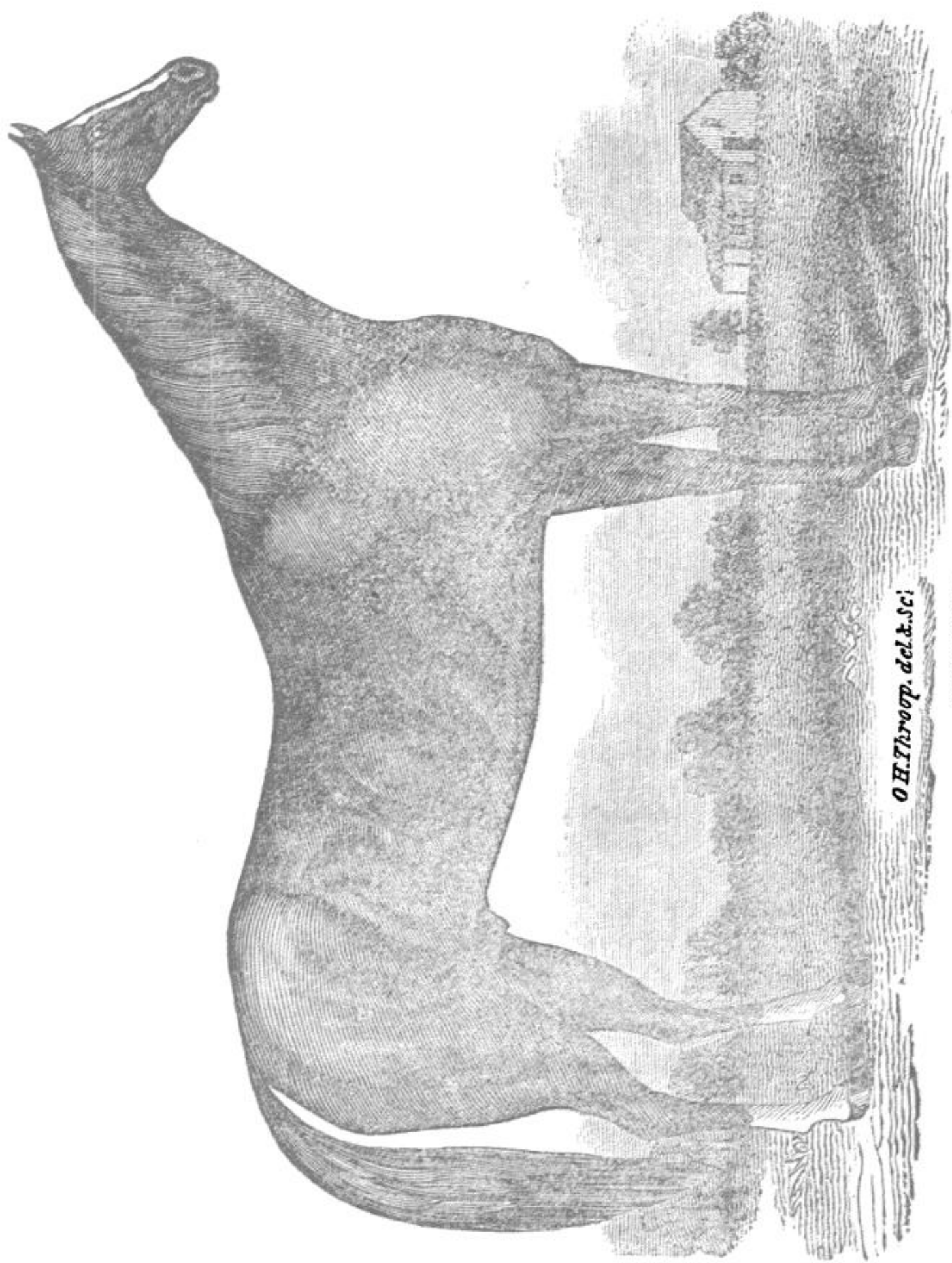
VITAL FUNCTIONS.

<i>Order I.</i>	<i>Order II.</i>	<i>Order III.</i>	<i>Order IV.</i>
Diseases of Absorption.	Diseases of Circulation.	Diseases of Secretion.	Diseases of Motion.

CLASS III.

MENTAL FUNCTIONS.

<i>Order I.</i>	<i>Order II.</i>	<i>Order III.</i>	<i>Order IV.</i>
Eyes, ears, nose or Organs of Feeling.	Cerebellum or Organs of Perception.	Cerebellum or Organs of Will.	Nerves or Organs of Motion.



O. H. Throop, del. & sc.

BOSTON.

A DESCRIPTION OF THE HORSE.

The horse to be perfect, should, in three things, resemble each of the following animals:—1. *A woman*—In wide chest, plump quarters, and long hair. 2. *A lion*—In boldness, stateliness, and fire. 3. *A bull*—In eye, nostril, and joint. 4. *A mule*—In hoof, strength, and perseverance. 5. *A deer*—In head, leg, and hair. 6. *A sheep*—In face, patience, and mildness. 7. *A wolf*—In breast, loin, and lope. 8. *A fox*—In ear, tail, and trot. 9. *A cat*—In walk, action, and leap. 10. *A snake*—In sight, memory, and suppleness.

Form and Shape.

Like a *Woman*—Chest broad, not deep; round back in horses are generally, if not always, too flat to breathe easy and digest well. I am in favor of those large in the girth, (all well-bred animals are large around the heart;) let the thighs be large, so as when you are behind, they cover the belly, muscles coming down to the hock, mane and tail full.

Like a *Lion*—Bold, fearless, fierce, courageous, and stately, a firm manner of standing, with all the feet well on the ground; a horse much wearied will be found resting on one or the other foot, and frequently shows lameness.

Like a *Bull*—The eye round and full, a flat eye indicates weakness of sight; nostril thin, easily dilated, the joint round and short, fitting closely.

Like a *Mule*—The hoof steep, black and slick, the strength of his limbs large, firmness of tendon and flesh, perseverance, his motions regular and constant, steadily bearing upon the bit and gear.

Like a *Deer*—Head well tapered to the muzzle, giving lightness to the head, causing them to carry up well, submissiveness to the bridle. Heavy headed horses are sluggish, and have great disposition to hold down their heads; legs broad, bone large, well tapered, adding strength to beauty, hair shining and lying close to the body, showing great endurance; this is a favorable sign for all well-bred domestic animals.

Like a *Wolf*—The loin well arched, connecting the fore and hind quarters, the breast full, giving expansion to the

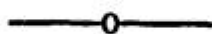
lungs, and admitting free action to the fore legs; the lope and stride free and easy.

Like a *Sheep*—Face free from flesh, bony, mild, and patient, the countenance quiet and tranquil, standing quietly.

Like a *Fox*—The ear well set up and pointed, round and sharp; trot, light, airy, and graceful, without jostling, tail bushy.

Like a *Cat*—Active, bending the body freely and easily, walking and leaping without apparent exertion.

Like a *Snake*—Sight strong, the eye free from moisture, the memory is for life, the suppleness of body enabling them to turn and twist in every direction without much exertion.



QUALITIES.

Action.

Animals possessing the best action are peculiar for large, clean, fiery, and dry eyes. For instance, the horse, the mule, the camel, and the lion; the ostrich, the turkey, the jumping fish, the serpent, and the frog.

Speed.

Those animals possessing great speed, are peculiar for their small head, short, and small jaw, namely: the horse, the deer, the grey-hound, the fox, the rabbit, the rat, the ostrich, the turkey, and the guinea-hen.

Health.

Health is the proper action of all the functions of the body. A failure of any of the functions to perform their required duty ensures disease. The best marks of health in animals are a lean, bony face, a wild, dry, and fiery eye, and a good smooth coat of hair of a bright glossy color.

Strength.

The prominent features of strength, are large and tapering limbs; short, full, and rounding joints, firm muscles; bright lively, and shining colors, with a wide back and broad loins.

The organ of strength gives width at the joining of the neck and head, with a bold and stately appearance.

Quietness.

Quietness may be known by a lean convexed face, with a mild and patient eye, and small head. This is plainly stamped on the sheep, horse, mule, and Bremen cow.

Docility.

Docility is known by the great width of the head above the eyes, which gives general observation, and by this observance prevents surprise. It is most perfect when the qualities of quietness are combined with it in a fine horse or mule.

Thrift.

Thriftiness is known by a long and may be large head.—The colors are bright and lively in horses, mules, cattle, hogs and sheep; and is particularly marked in the grey-hound, the lion, and the moose.

Fattening.

Animals that are easily fattened have short heads, round full face, with a great variety of colors; spots of white, black and red are desirable, and brindle is by no means inferior. The largest and best of our domestic animals are spotted and have a short head; the hog and ox fattens faster than the horse or mule.

Wind.

This organ is situated on the front of the head and near the ears above the eyes. It is remarkable in the mule and other animals that have this developed largely, have wind in proportion as shown in plate.

Bottom.

Bottom depends on large bones and ligaments. One animal may fail for want of strength, and another for want of wind. Mule and ox have large legs.

(From Buchanan's Journal of Man.)

CIRCULATION OF THE BLOOD.

The mechanism of the circulation is sufficiently understood, but our mechanical knowledge of the circulation, derived from Harvey and his successors, does not give us the law of the distribution of the blood. The knowledge of the channels and hydraulic apparatus, without that of the forces which preside over the circulation and distribution of the blood, is comparatively a meagre species of knowledge. Health requires an equilibrium of circulation, while disease produces a disturbance of the equilibrium—hyperemia being an essential element of inflammation, and every hyperemia of one locality indicating anemia of some other portion of the system.

The law of distribution indicating the tendency of each part to hyperemia, anemia or rectitude of circulation would indicate the tendencies of all parts of the system as to growth, health and disease—it would give us the philosophy of pathology, and would contribute much to rendering medicine an exact science.

We regard the circulation as controlled or modified by the brain, and also as reacting upon and reciprocally affecting the brain in accordance with the laws of sympathy between the brain and the body. The facts of this influence when arranged, show that each organ of the brain acts upon the circulation in the direction of its pathognomic line, or in other words, in the direction in which its fibres point. Thus, the organs of the external lateral surface of each hemisphere point more or less laterally, and did each hemisphere control the same side of the body, might be said to point externally; but as hemisphere controls the opposite side of the body, its lateral organs necessarily point internally, or toward the interior of the body, and hence tend to direct the circulation so as to determine toward the internal viscera, and produce that increase of their action which arises from an increased supply of blood, and which also produces this increased supply.

The range of organs lying just in front of the ear, running from the temporal arch downward along the jaw, indicates these determinations. The uppermost is the seat of the cephalic tendency, and indicates a determination toward the brain, increasing the activity of its organs. The location

next lower, (the pulmonic, indicates the determination to the lungs. The next location, near the top of the ear, indicates the determination to the heart, and the next lower to the liver. Below the cardiac and hepatic localities, we find the gastric and intestinal—the former at the articulation of the lower jaw—the latter extending along the course of the lower jaw nearly to the chin.

The developement of any of these regions, producing a determination to the part, indicates a tendency to its growth, developement and predominance. Hence, a local hyperemia is a natural consequence of each of these organs in very predominant developement, as anemia is of their absence, and the tendencies to disease may be accordingly determined, to some extent, by their size. When large, the diseases are of an active hyperemic character; when small, the tendency is to a predominance of torpor or debility.

The determination to the shoulder and arms is supposed to be controlled by the organs lying on the median line of the occiput, commencing at Firmness and extending as low as the neck; and the determination to the lower limbs depends upon the organs of the base of the brain, extending from the jaw, mastoid process and occipital spine, down the neck. These determinations are inferred from the sympathy of the different parts of the body with the brain. The region of the neck sympathizing with the lower limbs; the shoulder and arm with the medium range of the occiput; the lower part of the occiput or region of crime sympathizing with the lower and posterior part of the body; the lateral part of the occiput or region of Adhesiveness and Restraint, sympathizing with the upper part of the back; the entire abdominal region of the body sympathizing with the anterior surface of the chest, and the region of Virtue with its upper anterior and lateral aspects on each side of the intellectual department.

These determinations are accompanied by a peculiar state of the pulse, and as every cerebrial organ has its peculiar relations to the circulation and pulse, it follows that the pulse may be considered diagnostic of the state of the mind and body.

The cardiac region produces a state of excitement, and is indicated by an excited pulse, beating with rapidity and violence, but not with great regularity. If the excitement is continued the pulse is apt to become feeble and more unsteady unless the constitution possesses great tone or vigor.

The region of Health produces a full, firm, and regular

pulse ; the region of Disease produces a small, feeble, fluttering and irregular pulse.

The horse Boston on page 224 shows many good qualities, the form of the head shows that the circulations is strongest in the part that is connected with the developement, and when fattened will give growth to the front of the body with which it is connected, and tends to give length and width to it. The heart is supposed to be the centre of circulation and the front convex face gives the length of neck and shoulders, and the back head to the back, in width, breadth, length, and breadth of hips, and the jaws gives the belly width and fullness below the ears and above the eyes, and gives to the sides of the body.

First, the face of Boston is full and projecting, front of eyes gives long neck, large shoulders, and width of face and body, full jaws gives good full breast and low body ; his back-head is large, full at the joining of the head to the body, that holds up the head and gives width of back, length, and wide hips and thighs, these principles hold good with creation at large, the mule, cow, sheep, hog. Alpaca sheep with full fronthead, but not face, back is long. The giraffe is remarkable in the front face and front of the heart and in length of neck. The ostrich, turkey, goose, buffalo's fronthead is very large, and their breast remarkably large. The lion and the catamount is specimens to which you can apply these principles, and principles will serve for all. The backhead is larger in the deer, and is thrown up and backward ; his length, back and thighs is large compared with his belly, so is the greyhound, rabbit, frog, and alligator, is two-thirds of his length back of the heart. I have no room to allude here to other theorists, but to point to my own opinions of creation, in the drawings I allude to.

APPLICATION OF THE NATURAL LAWS TO THE BREEDING OF DOMESTIC ANIMALS.

General Observations.

The same laws, it has been already seen, are as applicable to animals as to man :—the law of Selection operating where both parents are of the same variety, when either gives the organs of sense, forehead, and vital system, and the other, the cerebral and locomotive system ;—the law of crossing operating where each parent is of a different variety, when the male gives the backhead and locomotive system ; and the female, the forehead organs of sense and vital system ;—and the law of in-and-in breeding operating where both parents are of the same family, when the female gives the backhead and locomotive system, and the male, the forehead, organs of sense and vital system.

But no law is dreamt of in the common practice of breeding.

In breeding hunters, says the author of the article Horse in the Encyclopædia Britannica, “observe similarity of shape in horse and mare. As length of frame is indispensable in a hunter, if the mare be short, seek for a stallion likely to give her length. Again, if the mare be high on her legs, put her to a short-legged stallion, and *vice versa* ; for it is possible that even a hunter’s legs may be too short ; a racer’s certainly may be.”

It is very true that stallions have been known both to give length of body and shortness of limbs. But this effort is as often unsuccessful as successful. How shall it be insured ?—As these laws show—by the male, possessed of these forms, having higher voluntary and locomotive power than the female.*

“Much more dependence,” says the same article, “is now placed on the stallion than on the mare.† The racing calen-

* Natural law is where the one gives the vital and fattening quality, which is the forehead and jaws, and in this case the animal is improved in size ; by partaking of the proportion of the two, and is larger than dam and commonly better than sires, not reducing the size, but improving in growth and proportion.

† The improvement of the colt depends on both equally. The best mule colt is that to which the dam gives its vital organs and speed reversed in formal sires. If the sire is superior to the mare, it will hold good. If the mothers are superior, the male colt.

dar, indeed, clearly proves the fact. Notwithstanding the prodigious number of very highly bred, and equally good mares that every year are put to the horse, it is from such as are put to our very best stallions that the great winners are produced. This can in no other way be accounted for, than by such horses having the faculty of imparting to their progeny the peculiar external and internal formation absolutely essential to the first-rate race-horse.”*

Such horses do so, because they have the “faculty” of doing so! A very satisfactory way of accounting, indeed!—Now, the cause is the same here as were the means indicated in the preceding case. Among good stallions, the best is he who is possessed of the highest voluntary and locomotive powers, which he accordingly stamps upon his progeny.

But it may be asked, of what consequence is it whether we call the stallion the “very best,” or say he has the “highest voluntary and locomotive powers.” The difference is, that the first expression states only the fact; the second, at the same time, assigns it reason, which enables us to connect the mere fact with other facts, and to derive from them useful conclusions.

Opposite conditions would enable the mare to stamp her voluntary and locomotive system upon the progeny—always with some disadvantages.

These remarks exemplify the use of understanding the application of the law of Selection. The utility of the law of crossing may be similarly exemplified.

“I have often been told,” says Sir John Seabright, “that from the beautiful shape of Mr. Elman’s South Down sheep, they must have been crossed with the New-Leicester; and that from the fineness of their wool, they must have been crossed with the Merino breed; but I do not conceive, that even the skill of this very distinguished breeder could have retained the good shape of the former, without any appearance of the coarseness of its wool, or the fine fleece of the latter, without the deformity of its carcass, had he crossed his flock with either of these breeds.”

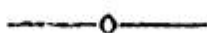
If “shape” here expresses the locomotive system, and if the wool be an appendage of that system, it is evident that they could not be thus obtained.

*He says the horse does so because he has the faculty of doing so. I have repeatedly shown that the best breeders have the most boldness, sulliness, and fire; and superior constitution; this will apply to the dam or sire in all their size, speed, &c.

These, though brief, are sufficient proofs of the importance of a knowledge of the application of the laws here announced.

It is rather more difficult to observe the application of these laws to animals than to man : 1st, Because animals are generally examined in a state of imperfect growth ; 2dly, Because the details of their forms are more or less obscured by hair, wool, &c.; 3dly, Because, when it is, not only not a cross, but when there is nearly a perfect homogeneity of form between the male and female, no difference can be expected in the result.

Hence my correspondent * * * *, who could not perceive such difference in his homogeneous herds and flocks, justly observes (23 February, 1838,) "It may possibly be that my experience relating only to animals which have been bred for many generations by persons having the same objects in view, are all of them so similar in their shape and constitution, that it is difficult to say which parent is the one that the progeny take after." And he adds, "I must beg to add that if you could prove upon scientific principles and practical experience any theory to be correct of the nature of the one you have adopted, you would do a great service to all those engaged in breeding animals."



THE HORSE'S ACTION AND SPEED.

In speaking of horses, the circumstance which will occur to every thinker as interfering with these laws, in the hypothesis of *blood* ; for certainly, if that could be transmitted in fourths, eighths, sixteenths, &c., it would be opposed to a doctrine, like that of these laws, according to which it is organization alone which is interchanged, and that always by halves gives or taken away. Indeed, I do not hesitate to acknowledge that, if there were the slightest truth in the hypothesis of *blood*, there could be none in the doctrine now laid before the reader.

It is curious, however, that although that unfounded hypothesis exists in the works of almost all writers, yet it was long ago refuted by Osmer ; and I cannot do better than quote

from his work on the subject, which is so perfectly in harmony with my own.*

“Horses who have the finest texture, elegance of shape, and most proportioned, are the best racers, let their blood be of what kind it may . . . If I was asked what beauty was, I should say proportion: if I was asked what strength was, I should say proportion . . . A proper length will also be wanting for the sake of velocity: no weak, loose, disproportioned horse, let his blood be what it will, ever yet was a prime racer.†

“If it be objected, that many a plain ugly horse has been a good racer,—I can even allow a very plain horse to be a prime racer, without giving up the least part of this system: for instance, if we suppose a horse with a large head and long ears, (like the Godolphin Arabian,) a low mean forehead, flat sided, and goose rumped,—this, I guess, will be allowed to be a plain ugly horse; but yet if such a horse be strong, and justly made in those parts, which are immediately conducive to action, if his shoulders incline well backwards, his legs and joints in proportion, carcass strong and deep, his thighs well let down, we shall find he may be a very good racer, even when tried by the principles of mechanics, without appealing to his blood for any part of his goodness.

“We are taught by this doctrine of mechanics, that the power applied to any body must be adequate to the weight of that body, otherwise such power will be deficient for the action we require . . . The force and power of a muscle consists in the number of fibres of which it is composed; and the

* We admire shape and proportion, and we have many racers in this country, and there are now only two whose forms are alike—Boston very long body and Fashion short. Dr. A. Walker learned much of Physiology, but has not classified the nerves, and for this reason alludes to muscles for all motion. If you paralyze the nerves, the muscles lose their action.

† Dr. Youatt on this subject, says horses of various shapes run well; he prefers good shape, but knowing the nerves is the seat of motion, his description is imperfect. A weak horse travels or runs on smooth and soft ground, but on pikes or hard track, may let down. If the bones and joints are as strong as the nerves, he may be a good performer. By nerves we may account for the speed of beasts, birds, and fish.

velocity and motion of a muscle consists in the length and extent of its fibres. Let us compare this doctrine with the language of the jockey: he tells us if a horse has not length he will be slow; and if made too slender will not be able to bring his weight through. Does not the observation of the jockey exactly correspond with this doctrine?"

I may here observe that my general law, applicable not only to muscles but to all organs, that *the intensity of function is as the length of organ, and the performance of function as the breadth of organ*, is the foundation of all rational distinction between horses for speed and horses for endurance in draught, &c.

"When we consider a half-bred horse running one mile or more, with the same velocity as a horse of foreign extraction, we do not impute that equality of velocity to any innate quality in the half-bred horse, because we can account for it by external causes: that is, by an equality of the length and extent of his levers and tendons. And when we consider a half-bred horse running one mile or more, with the same velocity as the other, and then giving it up, what shall we do? Shall we say the foreigner beats him by his blood, or by the force and power of his tendons?* Or can we, without reproaching our own reason and understanding, impute that to be the effect of our occult and hidden causes in one of these instances, and not in the other?"

"How many instances have we of different horses beating each other alternately over different sorts of ground! How often do we see short, close, compact horses, beating others of a more lengthened shape over high and hilly courses, as well as deep and slippery ground . . . And how comes it to pass that horses of a more lengthened shape, have a superiority over horses of a shorter make, upon level and flat courses? Is this effected by the difference of their mechanical powers, or is it effected by the blood? If, by the latter, then this blood is not general, but partial only, which no reasoning man will be absurd enough to allow.

"How many revolutions of fame and credit, have all sportsmen observed in these high-bred families . . . Observation shows us that on one hand, we may breed horses of foreign extraction too delicate, and too slight for any labour; and on

* Whilst he opposes the blood, he sustains his position in muscle forgetting that nothing has cause within itself. The name of nerves is seldom used.

the other hand, so coarse and clumsy as to be fitter for the cart than for the race. Shall we wonder that these cannot race, or shall we doubt that degrees of imperfection in the mechanism, will produce degrees of imperfection in racing! and when we find such deficient, shall we ridiculously impute it to a degeneracy of that blood, which once was in the highest esteem, or to the want of judgment in him who did not properly adopt the shapes of their progenitors! . . . Shall we confess this, or is it the fault of nature?

“If we should be asked why the sons of the Godolphin Arabian were superior to most horses of their time, I answer, because he had great power and symmetry of parts, (head excepted) and a propriety of length greatly superior to all other horses of the same diameter, that have been lately seen in this country.

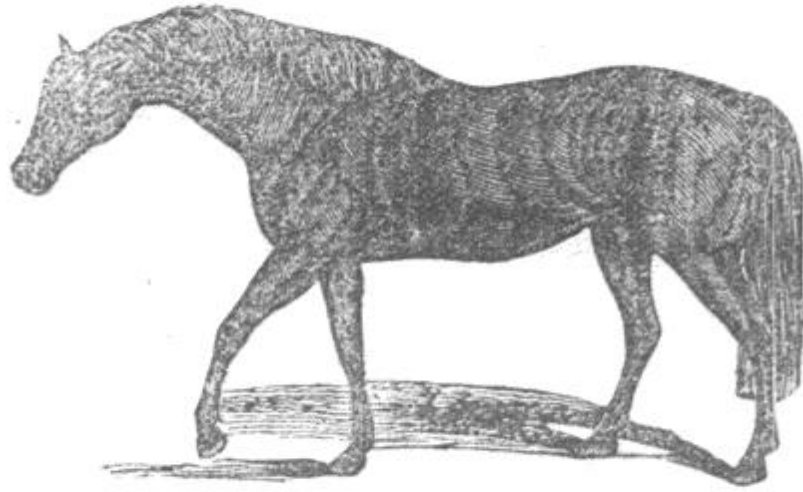
“If any man who doubts this excellence to be in the blood, should ask how it comes to pass that we often see two full brothers, one of which is a good racer, the other indifferent, or perhaps bad, I know of but two answers that can be given: we must either allow this excellence of the blood to be partial, or else we must say, that by putting together a horse and a mare different in their shapes, a foetus may be produced of a happy form at one time and at another *the foetus partaking more or less of the shape of either*, may not be so happily formed. Which shall be do? Shall we impute this difference of goodness in the two brothers, to the difference of their mechanism? or shall we say this perfection of the blood is partial? If the latter, then we must own that blood is not to be relied on, but that the system of it, and whatever is built on that foundation, is precarious and uncertain, and therefore falls to the ground of its own accord.

“Where shall we find one certain proof of the efficacy of blood in any horse produced in any age or country, independent of the laws of mechanics?*

“He who has a fine female, and judgment enough to adapt her shapes with propriety to a fine male, will always breed the best racer, let the sort of blood be what it will.”

* Laws of mechanics could hardly account for the action of mules and the speed of the horse, deer, and grey-hound, or the action and speed of the cat, rabbit, or ostrich, compared with the horse; or the leap of the frog and fish, the best of leapers.

THE BARB.



The Godolphin Arabian.

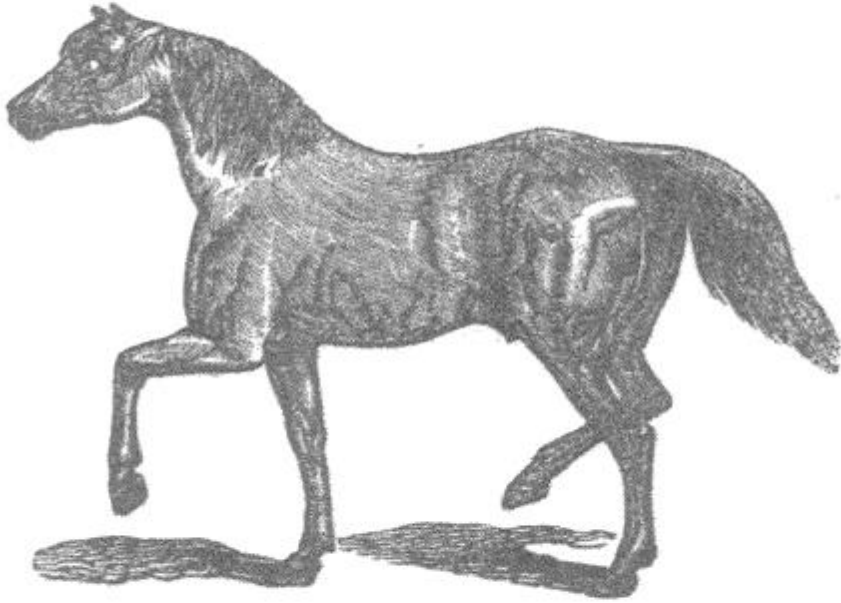
In giving a very summary account of the most celebrated and useful breeds of different countries, it is natural to begin with those of Africa.

At the head of these is the BARB, from Barbary, and particularly from Morocco and Fez, and the interior of Tripoli; and remarkable for his fine and graceful action. It is rather lower than the Arabian, seldom exceeding fourteen hands and an inch. The shoulders are flat, the chest round, the joints inclined to be long, and the head particularly beautiful. The Barb is decidedly superior to the Arab in form, but has not his spirit, or speed, or countenance.

The Barb has chiefly contributed to the excellence of the Spanish horse; and when the improvement of the breed of horses began to be systematically pursued in Great Britain, the Barb was very early introduced. The Godolphin Arabian, as he is called, of whom we have presented our readers with a cut, and who was the origin of some of our best racing blood, was a Barb; and others of our most celebrated turf-horses trace their descent from African mares.

More in the centre of Africa, in the kingdom of Bournou, is a breed, which Mr. Tully, in his almost romantic history of Tripoli, reckons superior even to those of Arabia or Barbary; it possesses the best qualities of both those breeds, being as serviceable as that of Arabia, and as beautiful as that of Barbary.

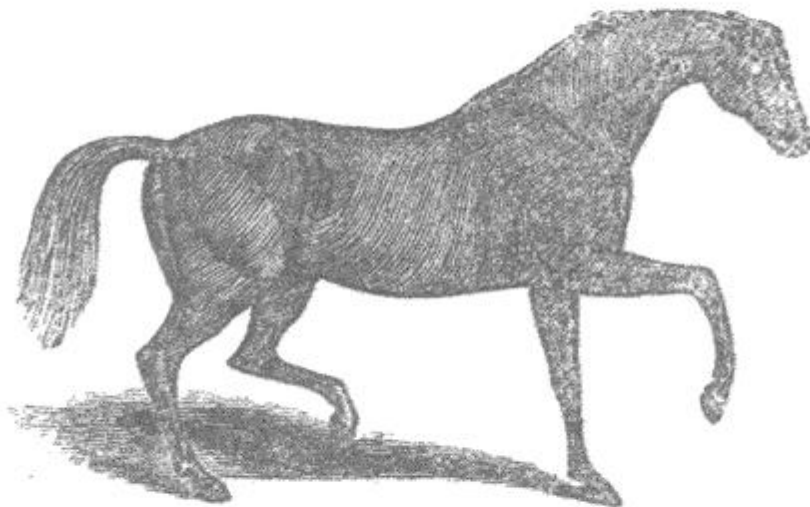
THE ARABIAN.



The Wellesly Arabian.

The Arabian horse would not be acknowledged by every judge to possess a perfect form: his head, however, is inimitable. The broadness and squareness of the forehead, the shortness and fineness of the muzzle, the prominence and brilliancy of the eye, the smallness of the ears, and the beautiful course of the veins, will always characterise the head of the Arabian horse.

THE DARLY ARABIAN.



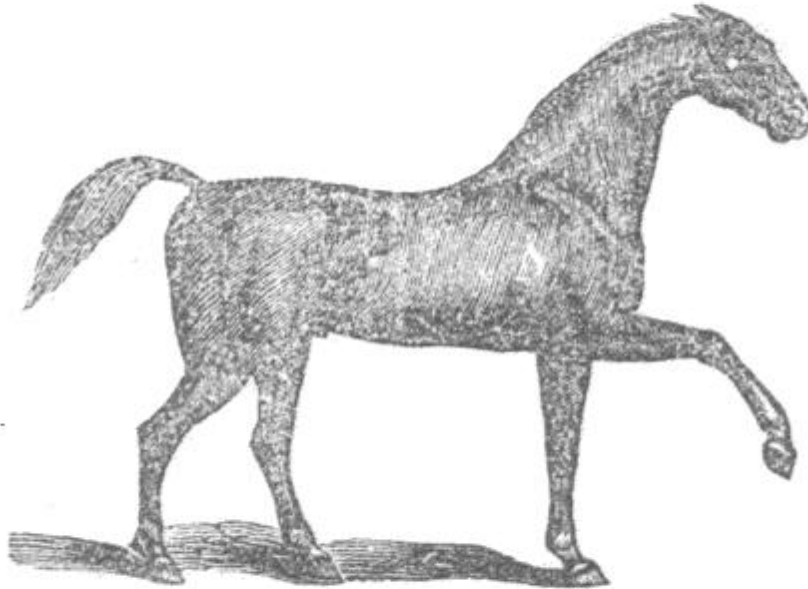
The Darly Arabian was the parent of our best racing stock. He was purchased by Mr. Darly's brother, at Aleppo, and

was bred in the neighboring desert of Palmira. The figure here given of him is supposed to be an accurate delineation. It contains every point, without much show, which could be desired in a turf-horse.

The immediate descendants of this invaluable horse, were the Devonshire or flying Childers; the Breeding or Bartlet's Childers, who was never trained; Almanzor and others.

The two Childers were the means through which the blood and fame of their sire were widely circulated, and from them descended another Childers, Blaze, Snap, Samson, Eclipse, and a host of excellent horses.

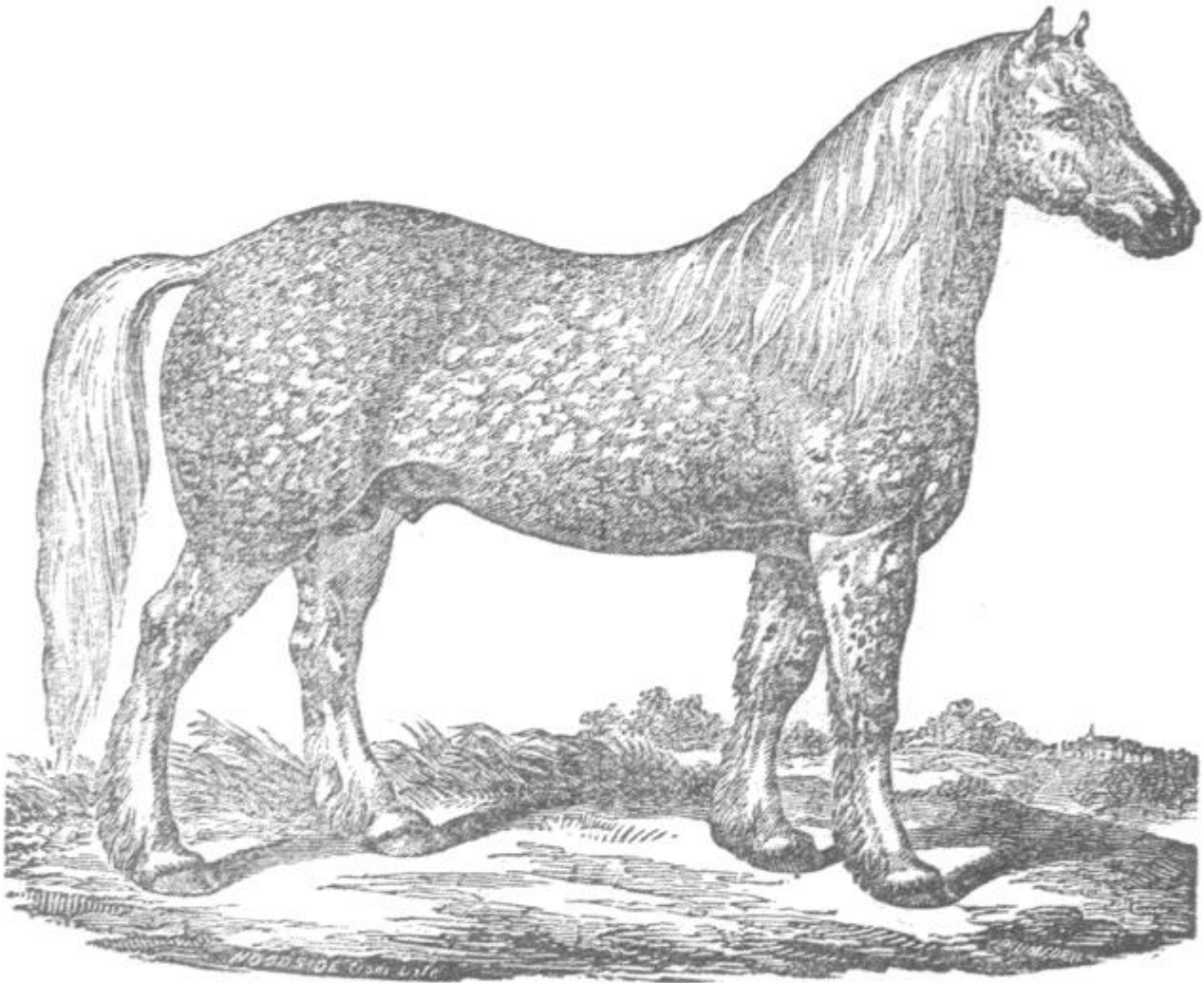
FLYING CHILDERS.



The DEVONSHIRE OR FLYING CHILDERS, so called from the name of his breeder, Mr. Childers, of Carr-house, and the sale of him to the Duke of Devonshire, was the fleetest horse of his day. He was at first trained as a hunter, but the superior speed and courage which he discovered caused him to be transferred to the turf. Common report affirms that he could run a mile in a minute, but there is no authentic record of this. Childers ran over the round course at Newmarket (three miles six furlongs and ninety-three yards) in six minutes and forty seconds; and the Beacon course (four miles one furlong and one hundred and thirty-eight yards) in seven minutes and thirty seconds. In 1772 a mile was run by Fire-tail, in one minute and four seconds.

In October, 1741, at the Curragh meeting in Ireland, Mr. Wilde engaged to ride one hundred and twenty-seven miles

in nine hours. He performed it in six hours and twenty-one minutes. He employed ten horses, and allowing for mounting and dismounting, and a moment for refreshment, he rode for six hours at the rate of twenty miles an hour.



Gray Norman.

The Gray Norman is a cross of the Arabian on the English draft horse. The Arabian has nervous eyes, small chin and head, light easy motion, easily ruled by bridle that a lady may drive in safety, and is in short, the most valuable for a farm. Large enough to draw good. Travels well under the saddle.

The manner of holding his head is a proof of his docility and stateliness.

WILD HORSES, CATTLE, AND HOGS.

In the prairies when they see you, if they have been frequently pursued by man, the horses form lines of defence, the mothers protecting the young. The sires defend their chief in command, and in front of lines, horses first, mares next, and colts in the rear. If you approach them quietly, and the distance is enough, when you get within three or four hundred yards of them and stop, the horse in command will gallop nearly to you, and around you, then go to his command. If you quietly pursue them, they will run from you, and if possible, may hide or form lines as before. If you continue your pursuit after the third running, they then will act, as if to say, what is your design. You should not halloo nor gallop after to alarm them. I have several times got close to them and among them, and turned them to the right or left as I wished. This principle has been applied to effect in 1825, and thirty droves were driven from Texas to Natchez, Mississippi. This will apply to cattle that have once been tamed. I will tell you of the case in Texas in 1843, and 1844. The horses had a desire to remain in a certain range and locality—they would not run out of certain prairies. I commenced travelling after them; they ran round their watering places—I suppose that they ran over eighty, or one hundred miles in the day, but by night that run would be a walk, and I then could ride among them. I could turn them right or left. The young ones would nicker to their mothers and mothers to them. I could see them and ride on the inside of their circuit. I suppose they ran four miles to my one. The weather was warm, and the mosquitoes bad. I was compelled to seek rest. The next day I could not find them.

To catch the wild beast, make a large pen, strong and high to prevent them from attempting to get out—put salt outside; leave it open in different places, let them go in and out; put gentle animals inside, in a small pen, salt and feed them, and they will soon become quiet. Then prepare a large gate, and give it a shut from the inside, and set it on triggers; then you may with small twine, pull the trigger at the distance of a mile. The lot should have angles in form, and a suitable lot and stall to get them in singly, one at a

time. Then blindfold and secure them, or if you wish to drive them, bell some gentle ones, and they soon will smell and listen at the others, and follow the drove. This I have tried on cattle and hogs, and it will be found practicable. Cattle you may put in yoke together. You should put to the bottom of the bows a pole tied loose to prevent them from getting their yokes turned around.

Wild animals all like salt, and by putting salt at a certain place, they will come to it. But they do not appear to want salt just before rain, and use less in time of wet spells, but in dry weather it is hard to keep them from it. By salting them regularly, all will become more quiet and docile, if you have no dogs about the place of salting.

I have seen wild buzzards or carrion crows alight in the streets of Charleston, South Carolina. I know a gentleman who feeds his fish—they will not go to another person.

The Character and Disposition of the Horse.

The natural character and disposition of the horse may be known by his manner of holding his head, by his own will, and his movements will often decide your judgment of the truth of it. The perfect head represents the full face and wide front head, that moves forward with light and low steps; and if he attempts to throw or dislodge his rider, he pulls down his head and kicks up. If he is larger in the back head and turbulent and skittish, he moves high and more short. If he runs he bounds too high to make the best speed. If he attempts to throw or dislodge his rider, is apt to rear and fall back, and hazards the life of himself and the rider. And such horses on threatening to fight turn their heels to kick, being stronger in their hind legs and hips. And the docile threatens with his fore feet and teeth, and stronger in the shoulder, and fuller breast. The timid and scary horse throws the rider by jumping from side to side, and carries out his nose. The intellectual horse turns his nose in and front head forward.

Color of Horses.

The breeding of horses, you have to bear in mind, after noticing their form, shape, length, breadth, and width, it is all important in obtaining the best colors.

Silver Grey has one advantage over all others, as this color reflects off the rays of the hot sun, better than any other; all other qualities equal.

The Red Sorrel is the next nearest to the white, and makes him next best, and is the most vital, and has the best circulation in the breathing power of the lungs, and the natural perspiration is easier.

The Bay, bright and shining, is remarkable for hardihood and great endurance, and the best of spirit. Will suffer more in the hot sun than the grey or sorrel horse, but often are good performers and desirable animals.

In breeding, first seek a cross of color, then the forms; by this you will get the best of all. It is often good to vary the color and by cross of forms, but when all is combined, it is the best of all. It is hard to express by the pen as clear as with animals, to write to attempt to satisfy the unbeliever, it is useless to attempt it. Such do not know enough of the subject—

—————It is God above and man below,
What can we reason from, but from what we know.

The law favorable to the improvement of animals is in crossing. If the best colors is in good health at the time that the colt is got, the colt will partake of it, either from dam or sire, and such is like to give good size. It is for this cause that it is always favorable to have either white feet and face, or a mealy nose.

The mule cross of colors in dam and sire, with mealy nose, will go with the largest cross jack and jenny, and all in good health and matured in age and body, is the most commendable, and it is of this description, that the superior ones have had their origin.

Heaves in Horses.

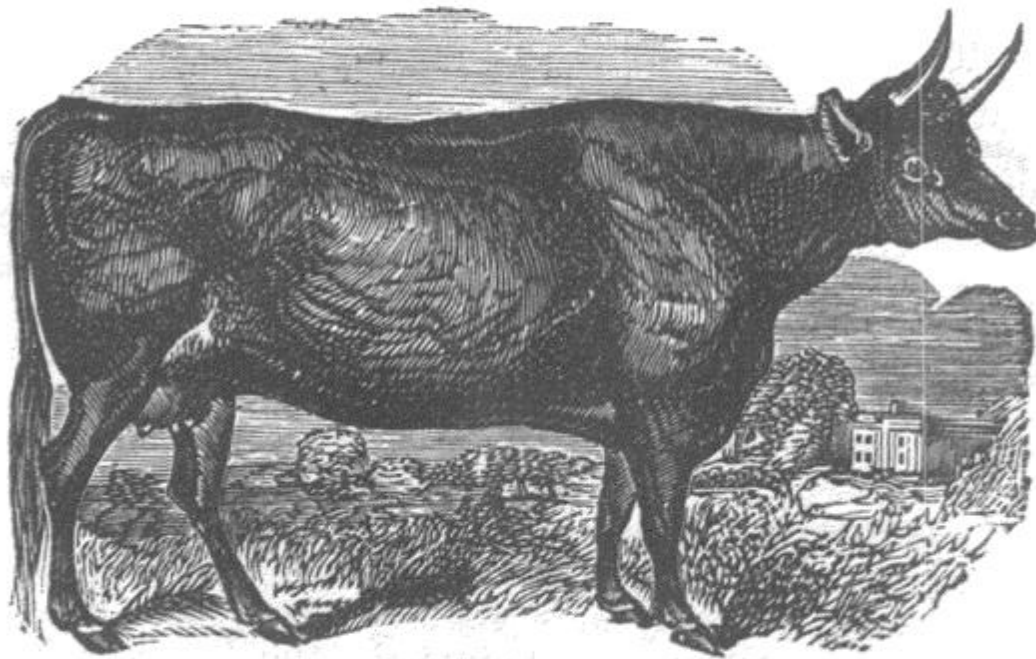
Take about a tablespoonful of tar on the point of paddle, and after drawing out the horse's tongue, place it as low down on it as possible, so that he will swallow it. This is to be done once a week; give him also the same quantity of ground ginger three times a week, mixed with his food, for one month. The horse to be only moderately worked. This remedy has cured many cases.

ESSAY ON CATTLE.

The Domestic ox, is not, as is well known, indigenous to America; but was introduced here by our European ancestors in the beginning of the 17th century. An attempt has been made to trace the origin of our common cattle, especially those of the northern states, exclusively to the English Devon; and it is probable that it did mingle largely in the early importations, from the fact that a large portion of the colonists were from the south of England, or embarked from ports in that district, where the Devon at that period was the prevailing. The characteristics of this variety also, as to horns, color, &c., have always been the favorite ones among the people of the United States. But at the time of the settlement of America, little attention, comparatively speaking, was paid to the breeds, or purity of blood, and it is altogether incredible that the emigrants, to whose number almost every port in England and probably in the United Kingdom, furnished its quota, should have been at the pains to procure the Devons. To say nothing of the preferences which each would naturally have felt for the cattle of his own district, it would argue a degree of care and solicitude on a subject, then deemed of little importance, altogether incompatible with the character and motives of the men who colonized the new world. Many of them probably were scarcely aware that there was such a breed in existence! Besides, the Dutch in New-York, and the Swedes on the Delaware, introduced the cattle of their respective countries, which were subsequently incorporated with the common stock. Although, as we have before remarked, the Devon characteristics prevail, the practiced eye will readily detect traces of this varied lineage. Few or none of our common stock equal the North Devon, in the finish and beauty of their proportions, more generally perhaps resembling the coarser Sussex ox; and our cows are better milkers. Our black polled cattle give indications of their Welsh and Galloway extraction, and it is but a few years since, on the Mohawk and Hudson rivers, there existed undoubted remnants of the stock imported by the Dutch settlers from Holland.

To speak of the merits of a race so varied, as a whole, would evidently be preposterous. Selections may be readily made from our common cattle, combining very considerable excellence for dairy, the yoke, and the shambles; while another and a larger portion are destitute in a part or the whole of these qualifications. Their value to cross with the improved breeds, will be hereafter adverted to.

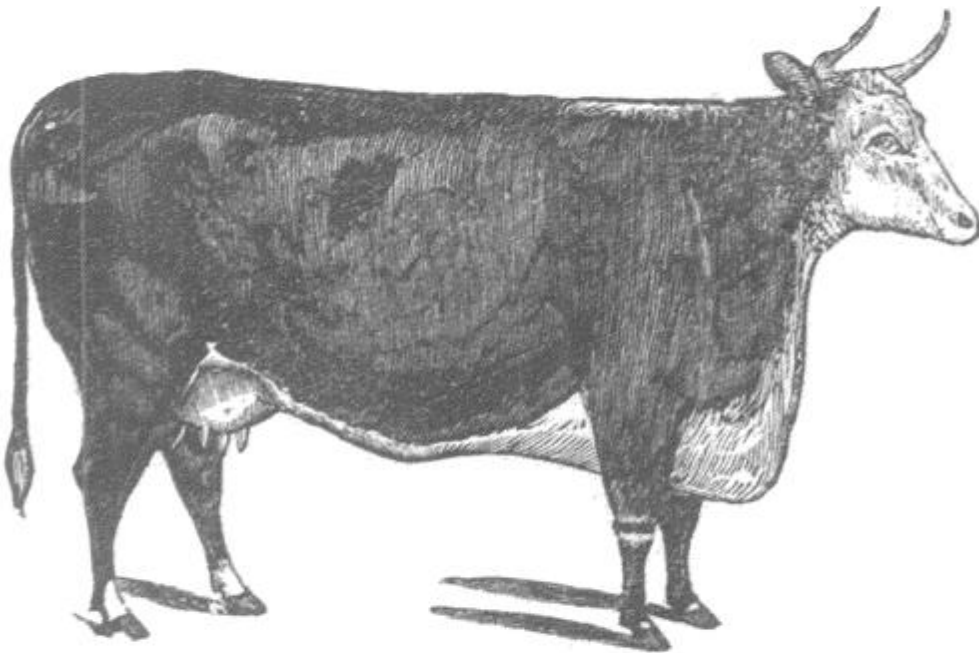
We shall proceed now to consider the breeds of later introduction, imported with the view of improving the common stock. These are the Devons, Herefords, New Leicesters, Ayrshires, Alderneys, and the Short Horn family, consisting of the "Improved Short Horn," or Durham, the Teeswater, Holderness, and a thick, heavy buttrcked variety of Yorkshire cattle, which have provincially obtained the name of "Devonshires."



The Devon—(Fig. 1.)

In symmetry and beauty of proportion, the high bred Devon scarcely acknowledges an equal. His delicate limbs, deep red color, beautifully tapering horns, high and spirited action, united with docility in the yoke, and a show of blood, falling little short of that of the thorough bred horse, have always rendered him a favorite with breeders of taste, in his native country. Favorable specimens of them were introduced into the United States in 1817, from the herd of the Earl of Leicester, (then Mr. Coke.) Notwithstanding his many excellencies, it cannot be said that the introduction of the Devon was attended with any striking benefits. Singularly suited,

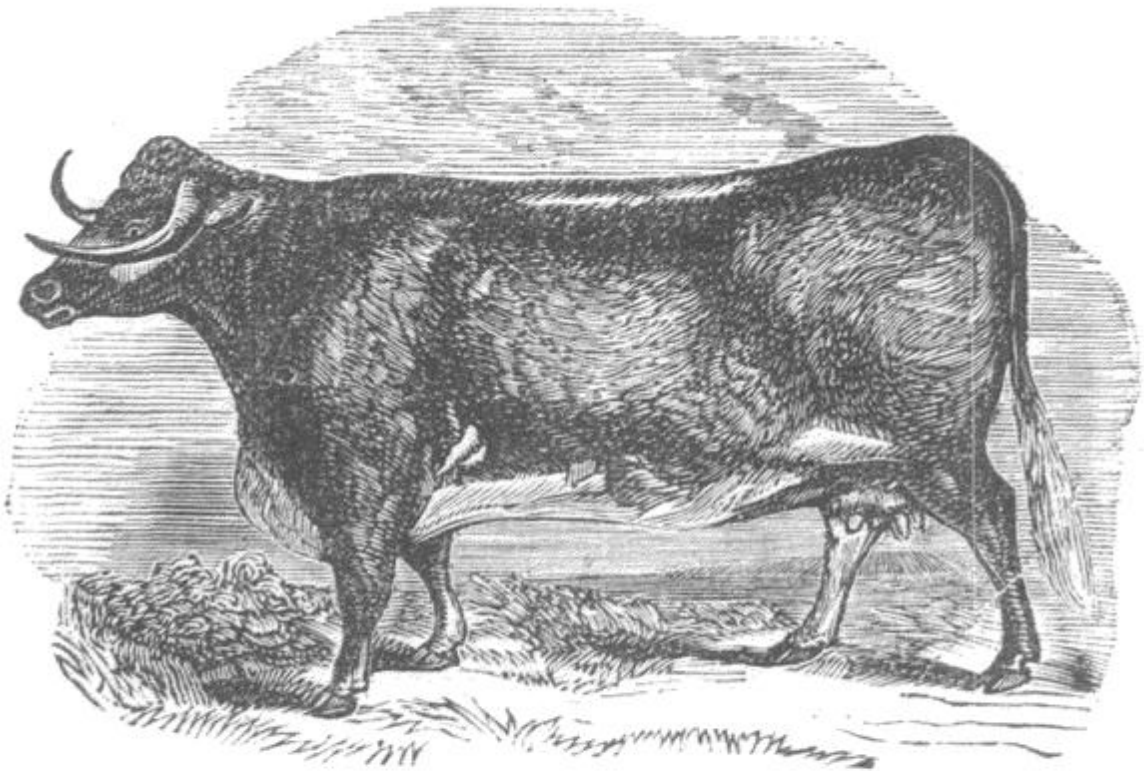
by his rapid gait for the plow, on the light lands of Norfolk, and some other parts of England, his peculiar excellence, his activity, has been found to avail him little on the more generally tenacious soils of the United States. In strength, the Devon ranks only in the fourth or fifth class of British oxen. The cross with our common cattle produced an animal somewhat improved from the latter in his points, but with no great additional value for the yoke, and decidedly inferior for the dairy. Yet a slight admixture of Devon blood, has been thought advantageous in modifying the coarseness of heavy, bony breeds, like the Holderness, and it has ever been strenuously advocated as a cross with the Improved Short Horn, by distinguished English breeders. But others object that the Durham gains nothing by the admixture in his propensity to take on flesh and fat; while size and milking properties are sensibly diminished. This was decidedly the opinion of Col. Powell, who instituted numerous experiments. The variety thus produced would doubtless be capable of enduring a shortness of keep, incompatible with the superior size of the pure Short Horn, and thus be better adapted to high and less fertile lands; but there are other breeds which as a cross with the Shot Horn, would be as well calculated to attain this end, without so great a sacrifice of milking properties. The portrait above (fig. 1,) is that of a Devon cow, owned by Mr. Western, which we copy from the Farmers' Series.



The Herefordshire, Cow.—(Fig. 2.)

The breeder has been taught by experience, that when the

cow, although she should be somewhat *roomy*, is too large and masculine, the ox will be brawny and coarse, and perhaps a little sluggish at work, and even somewhat unkind and slow in the process of fattening, and these are objections which, most of all, he would be unwilling to have justly made. The Herefordshire is therefore somewhat undersized; and it not unfrequently happens that she produces a bull-calf that grows to three times her own weight.



The New Leicester.—(Fig. 3.)

This breed, spoke into existence as it were, by the commanding genius of Bakewell, were derived from the original Long Horns, of the midland and north-western counties of England. The Lancashire or Craven, as this original variety is generally denominated, were characterized, at least the better portion of them, by their length and roundness of carcass, and by giving peculiarly rich milk, though in moderate quantities. They were large; coarse boned, but possessing a considerable, and sometimes a marked tendency to fatten. A smaller variety of the same breed, generally inhabiting mountain and moor lands, according to Mr. Youatt, gave milk as superior in quality. Out of these materials Bakewell formed the New Leicesters, which for aptitude to acquire external fat and early maturity, became almost unrivalled. He reduced the size, and especially the bone of the old Long Horns,

and under his moulding hand, the new variety reached a finish and beauty unknown in any other breed of the day. This is strikingly shown in the above portrait. (fig. 3.) from Garrard's Views of British Oxen. Unfortunately, however, milking properties were to a considerable extent, sacrificed by him. The Leicesters, or "Shakspears," as they are more usually styled in the United States, were of different colors, but more generally red, with finch or "lined" backs, as they are termed, in this country. Long, slim, tapering horns, projecting forward and downward, and turning up at the points—sometimes falling down the sides of the head in a curve, the points nearly meeting in front, is also characteristic of the race. The New Leicesters, owing to that cardinal defect in Bakewell's system, breeding from too close affinities, and to the appearance of a rival in the improved Short Horns, destined to sweep away all opposition, have nearly disappeared; but grades between them, and the old Long Horns are still cherished by many of the midland dairies of England. A cross between them and the Short Horn are still more common, and answer excellently for the purposes of the butter dairy. The milk of the Short Horn is improved in quality, though diminished considerably in amount, and the cross bred animals are supposed to be peculiarly hardy and unsubject to disease. Long Horns of various grades between the old Lancashire and the improved Leicester, have at various periods, been introduced into the United States, and specimens of them, crossed with the Durham, (with no admixture of other blood,) exist in this and one or two neighboring counties. They are a beautiful breed, possessing much of the substance of the Short Horn, with the peculiar fineness in the forend, characteristic of the New Leicester. Some of them are exceedingly delicate handlers, with thick, silky coats, are rich, though not uncommonly deep milkers.

The Ayrshire.

It is but a little more than fifty years since, according to Mr. Aiton, (the best authority on the subject,) the Ayrshire cows were "of diminutive size, ill-fed, ill-shaped, and they yielded but a scanty supply of milk; * * * the chine of their backs stood up high and narrow, their sides were lank and short, their hides thick and adhering to their bones, and their piles coase and open." In short, there can be but little doubt that they would gain nothing by comparison with

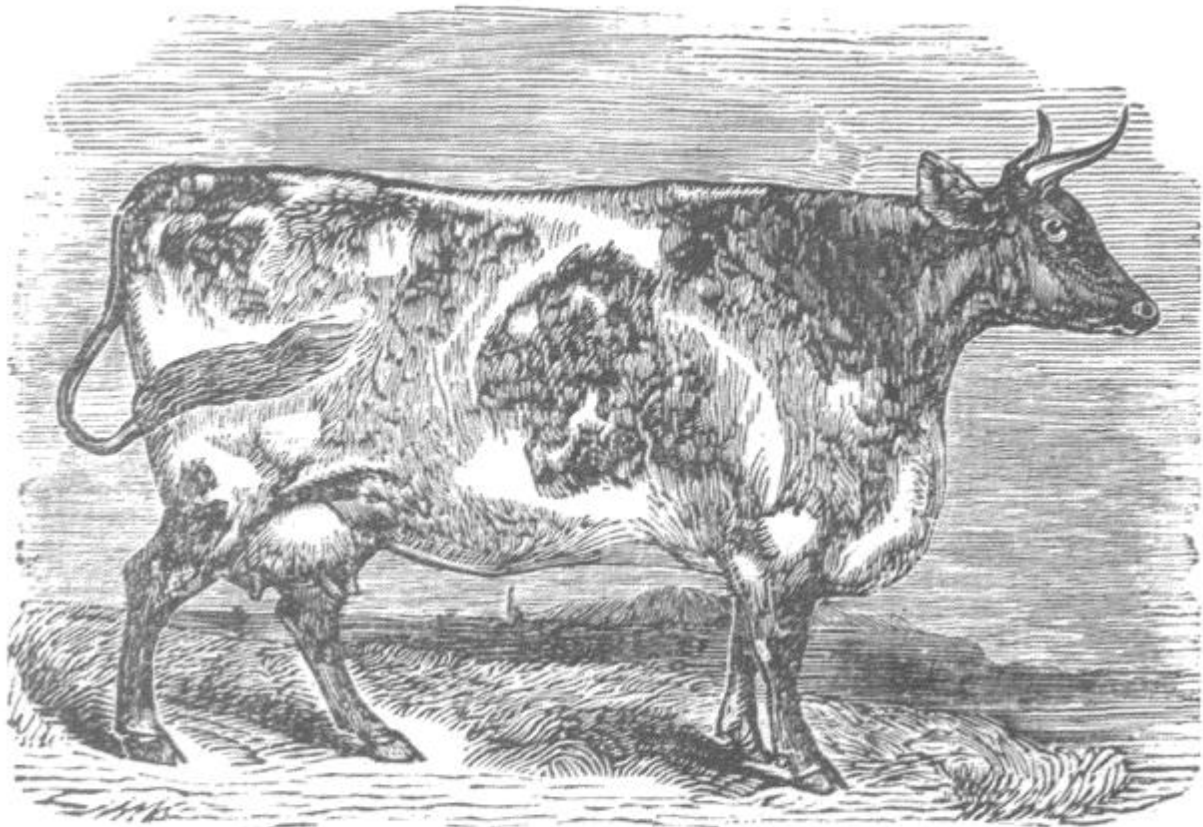
the most ordinary American cows. We had adverted particularly to their then condition, because in following them up to their present high degree of excellence, we find a lesson fraught with peculiar value to the American farmer. Our breeders have certainly as good, or a better breed on which to commence their improvements, and the ameliorating crosses which made the Ayrshire cow what she is, are equally within our reach. Though from the length of time which has elapsed, and the imperfect record, or rather the absence of all record, which is too generally kept of such transactions, little is known of the progressive steps attending the cross, and though there are some who seem disposed to call in question the fact, whether it ever took place, it is generally conceded that the present celebrated race were produced by a judicious admixture between the original cow of Cunnigham, Kyle, and Ayrshire, (Mr. Aiton's description of which we have already quoted,) and some of the earlier Short Horns, from the banks of the Tees. The benefit attending the cross were accelerated, and no doubt much heightened by the moist, mild climate, and rich herbage of that district of Scotland where the Ayrshires principally prevail; pronounced by Mr. Youatt, "the finest dairy county in Scotland, and equal perhaps to any in Great Britain." This improved race is of a red and white color, beautifully mottled, short in the leg, the horns small and fine, the head and neck delicate, the latter thickening properly toward the shoulders, the carcass deep but inclining to be flat, and the loin and haunch, compared with the Short Horn, narrow.

Five gallons of milk daily, for two or three months, after calving, three gallons for the next three months, and one gallon and a half for the remaining four months, in which she is milked, is stated as the *average* amount given by the Ayrshire cow. As a milker, she of course, yields to the larger Short Horn, nor will she take on an equal amount of flesh and fat, on the richer soils of England; and on the bleak and heathery hills of Scotland, the various breeds of black cattle would thrive and fatten where the Ayrshire would scarcely obtain a subsistence. But on medium soils, there is perhaps no breed, size and the consumption of food being considered, which presents a much better combination of milking and grazing qualities. Of their value as working oxen, our authorities are silent, and we do not know that any experiments have been instituted among the few imported into the United States. If they are good in this respect, such a breed would

be a desideratum in many portions of our country. But as we have before hinted, we believe this desideratum can be supplied more easily and cheaply by materials within our reach. This point will be discussed in its proper place.

The Alderney.

This small breed of French cattle, are fashionable in the parks and pleasure grounds of English gentlemen, on account of their diminutive size, and the peculiar richness of their milk. Col. Powel's fifteen years experience with them, pronounces them, in his somewhat summary way, "an unthrifty, dwarfish, savage breed; and Parkinson remarks, "they are of as bad a form as can possibly be described." Their appetite is voracious; an Alderney cow consuming nearly as much as a Short Horn, which is three times her size. Some of them have been imported into our country, but probably with no very great advantage.



The Holderness.—(Fig. 4.)

Some time during the 18th century, Short Horned Cattle were introduced into the north-eastern counties of England, from the adjacent continent. They are indiscriminately termed *Yorkshire or Holderness* cattle, by the early writers;

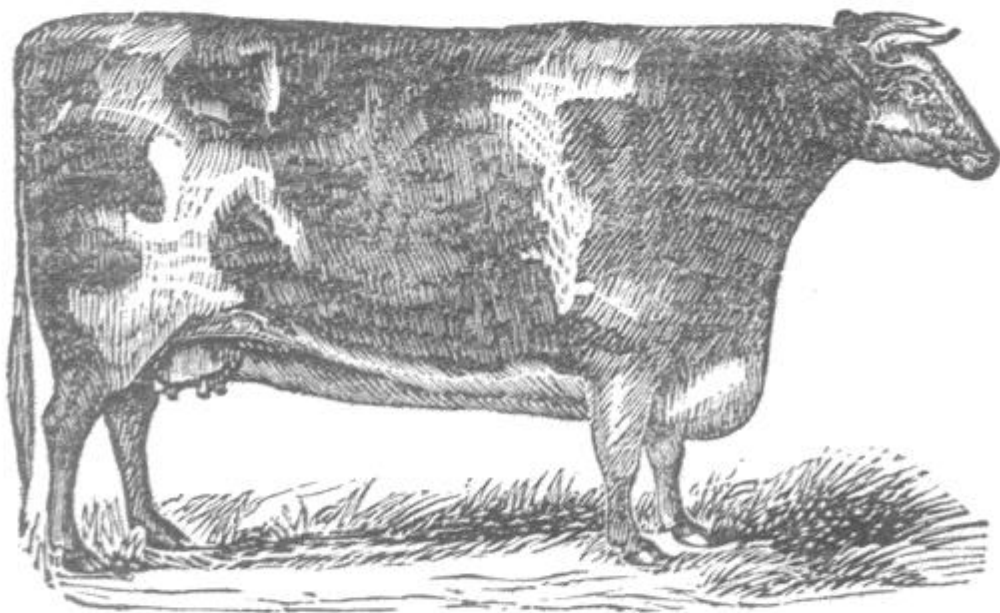
the former name derived from that of the county where they first began extensively to prevail; the latter derived from a town of the county, where either they were introduced, or where, as tradition runs, certain improvements in the breed were first attempted. They subsequently, as we shall see, attained the name of Teeswater, and finally of Durham, or "Improved Short Horn."

Marshall describes the original Holderness as "thin quartered, too light behind and too coarse before, large shoulders, coarse necks, and deep dewlaps." Lawrence, after passing a high encomium on a selection which might be made from them, describes the remainder as "long, gaunt, deep carcasses, without adequate substance, placed on high stilts, of the coarsest timber, slow feeders," &c. They were also, by the consent of all the English writers on the subject, thin skinned, inclined to be tender constitutioned, bad provers, their flesh coarse and often dark or "liery. In one particular, however, they were from the first pre-eminent, in amount of milk given by them, though it was not of so rich a quality as yielded by some other breeds. In York, Durham, the adjacent counties, over which this breed rapidly spread itself, early attempts were made to improve the form, without sacrificing their milking properties. Marshall gives a singular account of one of these efforts. After describing the Holderness, as we have already quoted, he says: "This, from being found disadvantageous to the butcher,
* * * * * the breeder attempt to enlarge the hind quarters; and had he stopped when he got to the happy medium, he would have wrought a good work; but the fashion was set—cloddy bullocks were in estimation. The first variety of this species of cattle, which I can recollect, was a thick, large boned, clumsy animal; remarkably large behind, with thick gummy thighs; always fleshy, but never fat, and the flesh being of a bad quality. This, however was not the worst; the monstrous size of the buttocks of the calf was frequently fatal to the cow. * * * * * They were probably the worst breed the vale ever knew." We have here an exact description of a variety existing in many parts of our own country, known popularly in this, and some of the adjacent counties, as "Devonshires," though their horns, to say nothing of their posterial deformity, proves this to be an entire misnomer. From the singular projection behind, they are commonly known also as "Punkin rumps;" and although large and rather showy, they are certainly the worst

breed in the United States. The picture given above, (fig. 4.) is that of a Holderness or Teeswater cow, crossed with the Improved Short Horn.

The Teeswater.

In more judicious hands the Short Horn rapidly improved. Among the spirited breeders, on the banks of the Tees, (which divides York and Durham,) they rapidly assumed a distinctive character; shorter legged, more compact, the milk but slightly diminished, and this more than counterbalanced by its increased good quality,—better feeders, hardier, carrying more fat, and their flesh more marbled and finer in grain. This signal improvement was effected, it is generally supposed, by a system of judicious crosses. An importation of cows from Holland, is usually referred to as one of these, and Mr. Berry conjectures the wild white breed of England to have furnished another. Hence the strong admixture of white in the Teeswater and the Durham. The improved variety, denominated indiscriminately, Teeswater or Holderness, immediately became the general favorite in the large metropolitan dairies and milk establishments. For milking properties, and when no longer used for that purpose, aptitude to take on flesh, England had never possessed so valuable a breed.



The Durham, or Improved Short Horn.—(fig. 6.)

At this epoch, and with such materials, Mr. Charles Colling commenced his career as a breeder. His wonderful success has been ascribed by some, to chance; but the Rev.

Henry Berry, the best possible authority on this subject, thinks otherwise. He pronounces it the result of "a deliberate and well considered plan." Mr. Colling found the Teeswater yet possessing some of the faults of the old Short Horns. From their overgrown size, they were too frequently coarsely and loosely formed, and they were entirely inferior to what the Durhams afterwards became, in aptitude to fatten and early maturity. Mr. Colling was remarkably favored in his efforts to counteract these defects, by the possession the bull "Hubback," the great ancestor of the improved race. He was smaller than the Teeswater, while "his flesh, hide, and hair," Mr. Berry remarks, "were seldom equalled." On account of his remarkable disposition to take on flesh, he soon became useless. The same qualities marked his dam. It is unnecessary for us, at this time, to follow the progressive steps which marked the onward career of the Improved Short Horns. While it is admitted that in the hands of some breeders whose attention has been exclusive to the carcass, their milking properties have deteriorated, it is well known that in other hands, they have fully maintained their equality with the Teeswaters as milkers, while in early maturity, kindly feeding, proof and quality of flesh, they decidedly surpass them. In early maturity they have, confessedly, no rivals, being ready for the butcher from two to four years earlier than the other English breeds. It is not wonderful that a race, presenting such a rare combination of excellencies, should soon become the favorite of the English breeders. The Long Horns have disappeared before them, or been merged in them by repeated crosses in the northern and midland counties, while in the south they are rapidly superseding the Hereford and the Devon. They have been engrafted on the Holderness Short Horns of the city milk establishments almost universally, and with manifest advantage. The produce, with milk very slightly diminished, but of increased richness, yield as profitable return in the dairy, while the value of the carcass for the grazier is nearly double in value.

Short Horns, of every variety, from the gaunt, unsightly animals described by Lawrence, to the most finished specimens of the improved family, have been repeatedly imported into the United States. The miserable, heavy buttocked variety, known here as "Devonshires," we have already adverted to. There are also among us, large and not unsightly Short Horns, probably a modification of the above, poor milkers and bad provers, which are popularly known as "Eng-

lish cattle,"—though they sometimes borrow the name of Teeswater or Durham, to suit the purposes of the seller. They are usually red or brown, with dark muzzles, their horns short, fine, and tipped with black. A Holderness bull from North Allerton, on the Arve, was imported from England a few years since, and finally driven to Oneida county in this State, where he remained until he died. Though a monster in size, and marked with the characteristic defects of the earlier Short Horns in his form, his get, with the best common cows, were valuable as milkers, and not deficient in symmetry. Animals of various degrees of merit, bearing the name of Durhams, but not of pure blood, have also been introduced at various times, on speculation. And finally, pure Improved Short Horns, in considerable numbers, have been imported by spirited breeders in several the eastern, northern, and western states.

The most Profitable Breed.

Having thus given a hasty summary of the principal facts which tend to throw light on the main question before us, viz. "*what breed of cattle is most profitable,*" we proceed to state our convictions on the subject.

That the common cattle of the country do not possess the greatest attainable combination of excellencies, will readily be admitted. A selection of them present very desirable qualities for the dairy and the yoke; but in feeding properties, and especially in early maturity they are deficient. A full blooded Durham bullock will go profitably to the butcher, at least two years earlier than the American, a decisive consideration to the graziers: and although the former is the greater consumer, the extra food required by him will weigh but little against the two or even one year's additional keeping of the latter.

But notwithstanding all that may be said for or against them, it is to the *best cross* with selected animals of the common race, feasibility and expense being taken into consideration, that the common American farmer must look for the most profitable breed of cattle. In this proposition we wish to be distinctly understood. We do not intend to assert that the produce of any cross we might thus make, would surpass in value breeds already in existence; but the entire substitution of a foreign variety for our own, presupposes an expenditure of time and funds utterly out of the question.

The question then is, with what breed is this ameliorating

change to be effected? On a careful comparison of the characteristic merits and defects of our own cattle, with the corresponding ones of other varieties, we arrive unhesitatingly at the conclusion, that to the pure improved Durham, we must look for the basis of the desired improvement. A cross with the Devon or Hereford, would sacrifice milking properties: the dwarfish and ill-shaped Alderney, is not to be thought of: the Ayrshire or the Long Horn, possess no excellencies that the Durham does not possess in a greater degree: and the Holderness, and the Teeswater Short Horns, compared with the improved race, are as the crude ore to the manufactured and polished metal.

Experience has already proved, that the cross between the Durham and our common race, is a most judicious one, and examples are not wanting of it in our own country. A few years since, a bull, sired by Wye Comet, was introduced into Homer, and his progeny are remarkable for their size, beauty, and milking properties. They are but few, as most of our people at that period, who gave a thought to the subject of the improvement of their cattle, and they were not numerous, preferred the cloddy buttocked Yorkshires! Yet, there is perhaps not one of the immediate descendants of this bull, that would not be readily selected out of a large herd of the best common cattle, for its superior beauty of form.

The first cross between choice native cows and the improved Short Horn, has generally resulted equally favorably; indeed, the very beauty of the produce, has tended to prevent further attempts at improvement, by encouraging farmers to breed directly from half and three-quarter bred bulls. They frequently have little of the beauty of their sires, and their services are to be more cheaply procured. But the characteristics of a variety thus obtained, are not sufficiently stamped upon them in the first, second, or even third or fourth cross, to be perpetuated with any great degree of certainty in their offspring. In the language of the Rev. Henry Berry, "to breed from the produce of a cross *directly among themselves*, will lead to the results which have induced many persons, without due consideration, to believe conclusive against crossing; but to take one cross, and then return and adhere to one breed, will in the course of a few generations, be found to stamp a variety with sufficient certainty."

Repeated experiments have amply demonstrated, that interbreeding between the Durham and our common race, if conducted on the principles advocated by Mr. Berry, viz: by a

constant resort to the pure blooded bull, is attended with a decided and manifest improvement of the produce in every successive generation. The bull selected, should be small of his kind; fine in the bone; unusually full in the crops and bosom, and wide in the loin and haunch—points in which the common breed are defective. He should be chosen too from a family of decidedly good milkers. If the bull is large of his kind, the produce are generally coarse, and marked with the defects which attend too great disparity in the size of the sire and dam. The dam should be as good in the points indicated in the bull, as our means of selection admits of: short legged, compact, deep in the girth, and a plentiful and steady milker. We have already alluded to the change effected by the farmers of Ayrshire on a purer breed, by a Short Horn cross; and there can be no good reason why the American farmer, with the same skill and perseverance, may not be equally successful. Indeed there are grade Durhams already among us, which there can be no doubt equal or excel the Ayrshire in every desirable point.

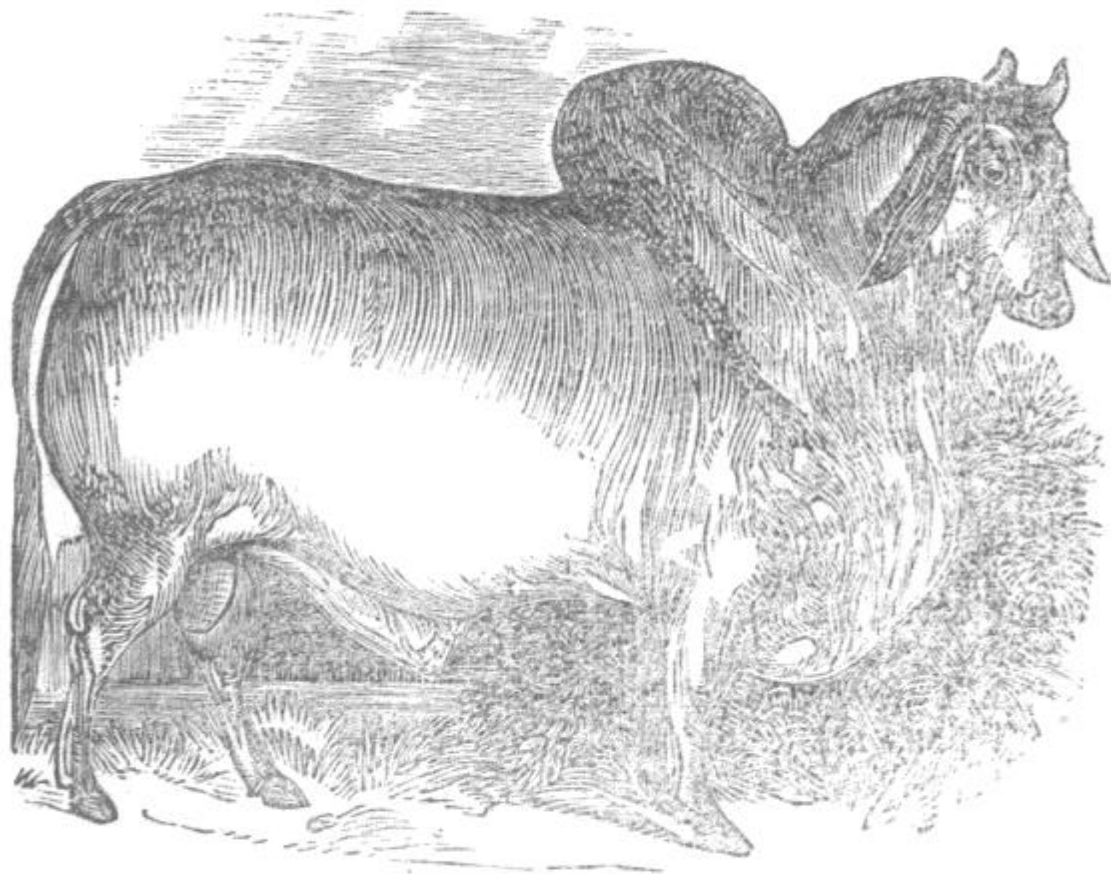
The Durham, as we have before remarked, requires more feed than our small native cattle. This, his superior size, would lead us to expect. But though a greater, he is a more promiscuous consumer, the coarsest quality of hay or straw being readily devoured by him. In England, straw, with a very small allowance of turneps, constitute his exclusive store keep in winter. But to bring this matter to its true test, will the Durham yield as great a return in flesh, fat, or milk, for the amount of food consumed, as any given breed? That he will, by repeated experiment, as well as his daily advancing popularity, in a country where there are many varieties greatly excelling our own in aptitude to fatten, and at least equaling them in milking properties, fully attest. The amount of food required by him, therefore, forms no objection to the improved Short Horn on good soils, either in his pure state, or as a cross with others.

The only question is, will the recommended cross supply us with working cattle? It is asserted on the best authority, that the pure blooded Durham ox, will “work admirably;” and the reason assigned for his not being oftener used for that purpose in his native country, is, that his early maturity makes him too valuable at three, for the butcher, to be retained with profit until four or five, for the yoke. There can be but little doubt that united with our smaller, but vigorous and active race, a heavy and powerful variety of working cattle will be

produced. Those especially fed on upland and less nutritious pastures, whose labor *ought* to compensate for their tardier maturity, with size, feeding properties, and docility, increased by the cross, will lose little, and probably nothing of the activity and hardihood of the common race. To what precise extent interbreeding should be carried, to produce the most valuable breed of working cattle, experience can alone determine.

HENRY S. RANDAL.

Cortlandville, January, 21, 1840.



The Nagore Bull.

A bull and cow were exhibited at the Christmas cattle show, in 1832, under the denomination of Nagore cattle. They were beautiful animals, and attracted much attention. They were the property of Henry Perkins Esq., of Springfield, near Wandsworth, to whom we are indebted for the substance of the following account of them.

They were bred by Lieutenant-Colonel Skinner, at his farm at Danah near Pokah, on the borders of the Bichaneer desert, one hundred miles to the westward of Delhi. They are not buffaloes, but of the highest breed of cattle. They

are used in India by the higher orders, to draw their state carriages, and are much valued for their size, speed, and endurance, and sell at very high prices. These specimens arrived at Calcutta, a distance of 1400 miles, in January, 1820, and were then something under six months old. They were sent as a present to Mr. Wood, who was then residing at Calcutta, and by whom they were forwarded to Mr. Perkins.

Colonel Skinner has a large stock of them; and six or seven beasts are always kept saddled to carry the military despatches. They remain saddled three or four hours, and if not wanted in that time, fresh ones are brought out to relieve their companions. They will travel, with a soldier on their back, fifteen or sixteen hours in the day, at the rate of six miles an hour. Their action is particularly fine—nothing like the English cattle, with the side-way, circular action of their hind legs—the Nagore cattle bring their hind legs under them in as straight a line as the horse. They are very active, and can clear a five-barred gate with the greatest ease. Mr. Perkins has a calf which has leaped over an iron fence higher than any five barred gate; and the bull frequently jumps over the same fence in order to get at the water, and when he has drank his fill leaps back again.

The bull (Jupiter) was in high condition when exhibited. He was employed in a light cart, and various jobs about the farm: sometimes he goes fore-horse in the wagon-team, to deliver corn; he also drags the bush-harrow, and draws the light roller over the ploughed land. He is very docile and tractable, when one man drives him, and attends upon him, but he has, now and then, shown symptoms of dislike to others.

He is fed entirely on hay. Except when he works, a little bran is given to him, and in the turnip season he is treated occasionally with a few slices of Sweedes, of which he is very fond. He was at first very troublesome to shoe; and it was necessary to erect a break in order to confine him. He was unwilling to go into it for some time, but now walks in very contentedly.

He is very fond of being noticed; and often when he is lying down, if any one to whom he is accustomed goes and sits down upon him, and strokes him over the face, he will turn around, and put his head in their lap, and lie there contentedly as long as they please.

Mr. Perkins very properly observes, that the chief advantage of these Brahmin bulls would probably consist in their

speed and strength, in both of which they surpass any of our breeds.

The cow (Io) is at grass with the milch cows, and comes up with them morning and evening, when they are driven to be milked; but Mr. Perkins has not ventured to have her milked, on account of the probable danger of the attempt: the value of these cattle for the pail is therefore unknown. Two calves have been bred from them, and a milch cow is now in calf by the bull.

Neither of the calves is yet old enough, or ready, for the butcher and therefore the quality of the meat is unknown; but a strong perfume being left upon the hand when it passes over them, there may possibly be a peculiar taint in the meat.

Cows and Milk.

Every farmer or dairyman is aware that there is a vast difference in the quantity and quality of milk given by different cows, yet this variation is made by very few the basis of any calculation as to the actual profit or loss in keeping such animals. As a general rule, it must be admitted that cows that yield a large quantity of milk, require more and better feed than those which yield less, in order to maintain the same flesh; but this is a point much depending on the breed, and its constitutional qualities. The average of the best common dairy cows, will not for six months exceed ten quarts per day, while numerous instances are on record, of cows which have averaged more than double this quantity for the same period. We very much question whether a majority of our cows produce half a pound of butter a day for the same period of time; while the instances are not a few, in which cows have yielded from ten to twelve pounds per week, and some have much exceeded this, as the examples we shall give will show. We think if the vast difference in profit between a good and a poor cow was duly considered, much more pains would be taken to produce and rear such animals and breeds as would best serve the purposes of the dairy or the farmer. There is no propriety in the farmer's keeping some half a dozen inferior cows to devour his pasture in the summer, and empty his barns in winter, to make butter for his family, when half the number of good animals will do it much better, and enable him to dispose of the extra fodder the others would consume, or add to his other stock in the same proportion.

Very few instances have been given where the quantity of milk from a number of cows has been determined with accuracy. Mr. Aiton, from the record of several years with a herd of the best Kyloes or North of England cows, gives the following result, in which confidence may be placed:

“First	50 days,	24 quarts per day,	1,200
Second	“	20 “	1,000
Third	“	14 “	700
Fourth	“	8 “	400
Fifth	“	8 “	400
Sixth	“	4 “	300.”

Being 4,000 quarts to each cow, or an average of 13 quarts for 300 days.

In Dickson's Survey of Lancashire, the quantity of milk produced by five short horned cows of the ordinary, not improved breed, in the summer at pasture, and winter at hay and turnips, is stated as follows:

“One which did not go dry at all,	4,857 quarts.
One dry eight weeks,	3,985 “
One dry six weeks,	3,987 “
One dry “	3,695 “
One dry eighteen weeks,	3,383 “

A large dairy on the late Mr. Curwen's farm, gave on an average of four years, 3,700 quarts to each cow, but the average in Lancashire generally, it is stated at between 8 and 9 quarts. Some of the county reports in Transactions of the Agricultural Society, average the quantity as below:

Devonshire,	12	} quarts per day.
Cheshire,	8	
Lancashire,	8 to 9	

Mr. Wm. Crams, in Sussex, had a cow that in four years, from 1805 to 1809, gave 23,549 quarts of milk, producing 2,132 pounds of butter; probably the greatest instance of continued productiveness on record. Since the improved Short Horns have become so well known, occasional examples of still greater amounts of butter or milk for a short time have been furnished. Thus the Rev. Mr. Hacket, near Newark, Eng., had a cow which produced 19 pounds of butter in a week, though the average of the cows in that vicinity did not exceed six pounds per week. A cow of Mr. Calvert produced 373 pounds of butter in 32 weeks; and for 20 weeks averaged

20 quarts of milk a day. The Yorkshire cows have in many instances been remarkable for the quantity of milk produced by them; many, during the height of the season, yielding 30 quarts a day, and instances have occurred of reaching 36 quarts.

The instances of uncommon productiveness both in milk and butter, among the cows of this country, are very numerous. These instances of great yields are more common among the improved breeds of imported stock, or such as have been derived from them, by crosses with the native stock of cattle, than among the old stock alone. Thus Col. Jacques' Cream Pot breed, the result of a cross between the Durham bull and a native cow, has produced butter at the rate of 17 pounds in a week. We noticed not long since in the Pennsylvania Inquirer, a statement of Mr. Gowens' Short Horn cow "*Dairy Maid*," which yielded $33\frac{1}{2}$ quarts of milk per day for a week; but the most remarkable instance of productiveness in a cow, all things considered, we have ever noticed, is found in the following statement of Mr. S. Canby, of Woodside, Delaware, furnished for the Delaware Journal. Mr. Canby's cow is called "*Blossom*," and is from the excellent stock of C. H. Hall, esq., of New-York.

After mentioning Dairy Maid, Mr. C. adds:—

"I concluded to try my cow Blossom, a statement of whose milking for one week you will find below, and by which you will perceive she averaged for the week over 35 quarts per day, and yielded $13\frac{1}{4}$ pounds of well worked butter. * * My dairy maid is firm in the belief that at a cooler season of the year, or with a spring house, the cream she had from Blossom would have yielded 15 or 16 pounds of butter.

"Uncommon as this produce may be, I do not consider it more so than the fact of her never having been dry since she had her first calf, more than two year ago, and in the space of 25 months, has produced five living calves, viz—on the 5th of April, 1838, she had her first calf (Delaware;) on the 4th of July, 1839, she had twins, (Liberty and Independence;) and on the 16th of May, 1840, she had twins again, (Romeo and Juliet;) and I think I can safely say, that during the whole of that time she has averaged full 20 quarts of milk per day; she gave 25 quarts per day with her first calf, and made nearly 12 pounds of butter per week."

Mr. Canby in both years tried to dry Blossom before calving, but found it impossible. If Mr. Canby is right in his

estimate of the average daily quantity of Blossom's milk, she greatly exceeds any other cow on record in product. The average of Mr. Cram's cow, which has been considered at the head, was 5,837 quarts per annum, while Blossom's is 7,300. The average yearly product in butter of Mr. Cram's cow was 533 pounds, and that of Blossom, as estimated by Mr. Canby, 624 pounds.

It is not to be expected that the average of the cows in any country can be made to equal these extraordinary yields of milk and butter; yet when we see what has been done by Col. Jacques, and to what perfection care and judicious selection has brought other breeds of domestic animals, we can conceive no good reason why our dairies should not have their profits vastly increased by improvements in the milking qualities of the animals composing them.

Cooking Food for Animals.

All are aware that grain of almost every kind greatly increases in bulk by steaming or boiling, and this bulk is greatest at the moment the grain is swelled so as to crack or burst its skin. It is also known that cooked food is far more nutritious to animals, than that which is uncooked; and many have gone on the supposition that its value for food was equal to its bulk in cooking. This is doubtless a mistake, as the nutritive power of articles is rarely in proportion to their size, and never perhaps exactly in proportion to their increase of bulk in cooking.

Reaumur instituted a series of experiments to determine the rate of increase in different articles of food most commonly used for animals, and found the result of some of them as follows:

4	pints of oats after boiling,	filled	7	pints.
4	“	barley	“	“ 10 “
4	“	buckwheat	“	“ 14 “
4	“	Indian corn	“	“ 15 “
4	“	Wheat	“	“ 10 “
4	“	Rye	“	“ 15 “

In the continuation of his experiments to ascertain the effect of such food on animals, that with some of these articles, though the bulk was much increased, the total of food re-

quired to satisfy the animal, was the same as if no cooking had taken place; or that an animal that would eat half a bushel of oats dry, would eat a bushel cooked with the same ease. The nutritive power was, however, apparently increased, or the whole of it contained in the grain made available; which, when grain is fed whole or raw it is rarely the case. On the whole, he came to the conclusion that when wheat, barley, or Indian corn, is used for feeding, it is far more economical to boil or cook these grains, than to feed them in a raw state; but that little is gained on the score of economy, when time, fuel, &c., are taken into consideration, in cooking oats, rye and buckwheat.

In determining the question of economy, much we think is depending on the manner in which the cooking of the grain is performed, whether alone or with other substances, such as roots. Alone, corn is the most improved by cooking of any of the grains, and the value of corn meal for making pork, it has been shown by experiment, is almost doubled when made into pudding. We have been long in the habit of boiling and steaming potatoes for feeding pigs or making pork. With them, in the early part of the feeding, we incorporate apples, squashes, pumpkins, or indeed almost any vegetables of which swine are fond. The grain we use, is ground, and either steamed with the roots, or mixed with the hot mass in the vats, as it is taken from the steamer. As the feeding progresses, the quantity of meal is increased, until towards the last, that material alone is used. Corn is decidedly the best grain for making pork; peas and barley are next; with the others, we have had little experience, though what we have had with buckwheat has impressed us favorably of its value.

(*Letter from Mr. T. Eades.*)

LEXINGTON, Ky., *January 6th*, 1854.

Dear Sir: Your letter requesting me to send you the height, weight, and color of some of my half blood Brahmin cattle, was received on yesterday. Some of them will weigh over 100 pounds a month; at the age of ten months, 1010 pounds; at six months, upwards of 600 pounds. I sold a calf to Mr. Stratton of Mississippi that is now eighteen months

old and measures $14\frac{1}{2}$ hands high and finely proportioned, a beautiful red. They are all red or white.

Yours, respectfully,
T. EADES.

P. S.—Take them altogether they are the thriftiest and finest cattle I have ever seen, and make the best oxen. I intend killing one in a few days, you can then by noticing the newspapers of this place, learn what kind of beef they make.

T. EADES.

DENTON OFFUTT.

Great Calves.

We have collected from various sources the following notices, which, more conclusively than any thing else, will show the size of the Short Horns. This great size of the progeny, however, renders the crossing with the "scrubs" or common breed of cows, somewhat dangerous; as in a single neighborhood we have known two instances in which cows crossed with a Durham, died during parturition.

GOOD.—Mr. G. V. Sacket of Seneca-Falls, is the owner of a Durham calf, which when four hours old, was carefully weighed by a number of gentlemen, and found to weigh 110 pounds.

VERY GOOD.—M. B. Simmons, of Madison, has a calf which weighed when two days old, 122 pounds.

STILL BETTER.—(We do not say the *best*, because we might be obliged to recall it.) Dr. J. Miller, of Truzton, has a calf of the Short Horn Durham, which, when one day old, weighed $132\frac{1}{2}$ pounds, and on the second day 136 pounds.

YEARLING DURHAM BULL.—Mr. George Geddes, of Camillus, has a Short Horn bull, which in April last at the age of one year, weighed 900 pounds.

The Selection of Cows for the Dairy.

According to Mr. Quenon's discovery which has been published by John Nefflen, I am pleased to learn of any improvement that may be made on all subjects, so far as the marks

of bag and teats are concerned. But the natural laws of physiology has not been considered by him, and this is the basis and foundation of our subject, they are our stars on the internal as the colors are our sunshine, as the important guide to the Divine Truth. The form of the bag, teats, and the large veins of the belly has been noticed by myself and many others.

Mr. Guenon in his book, has given several illustrations showing the different marks on various cattle, which, no doubt, has been of considerable profit to many, and will no doubt continue to be of advantage to the public at large.

I have adverted in a previous work of mine, where I differ with him on the subject of the head and mouth of the cow. Mr. Guenon recommends the selection of cows with long heads and wide mouths. In this we disagree, as I give the preference to those having a short head and small mouth, with a large eye and full, for these, in my judgment, is the best evidence of rapid fattening qualities and healthiness. The shape of the leg or length of tail I maintain has nothing to do with the production of the milk or the growth of the cow. Such ideas I regard as not being founded on any basis, and therefore unnecessary for me further to dwell on.

The following are considered as favorable milk marks:—

- a*, a broad large mouth ;
- b*, yellow or short or thin horns ;
- c*, delicate, soft, short, and close hair ;
- d*, broad, well spread ribs ;
- e*, a broad chest ;
- f*, a thin long tail ;
- g*, straight hind legs ;
- h*, a regularly arched udder, covered with a short, close silky down ;
- i*, four teats of equal length and thickness ;
- k*. thick projecting so called lacteal veins, which run along under the belly, under the udder, towards the fore-legs, forming a fork at the end, and finally losing themselves in a round cavity.
- l*, The milk-wart in the middle of the lower jaw, at the broadest part, nearer to the mouth than to the throat.

The more important of these points, are the five latter, from *g* to *l*. The others are less decisive.

The following are considered unfavorable milk-marks:—

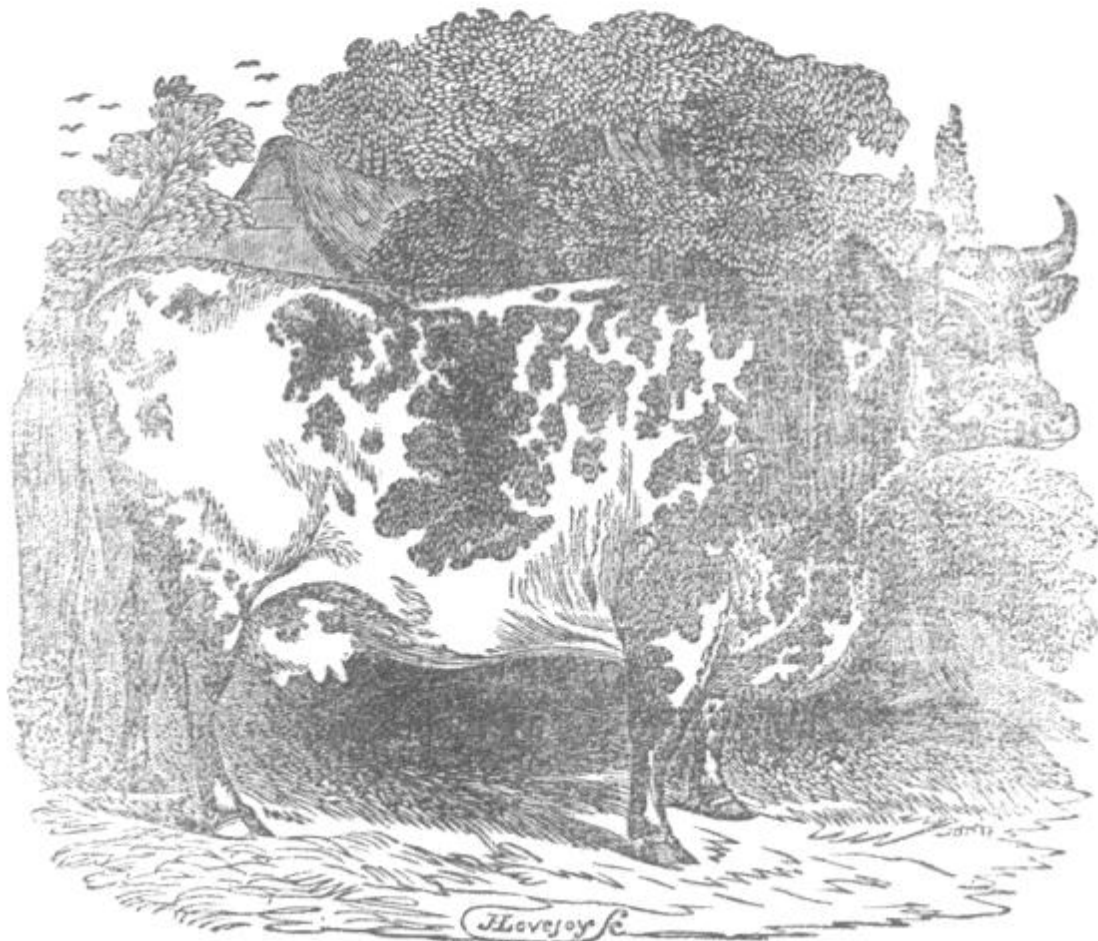
- a*, long thick horns ;

- b*, a long, narrow, pointed head ;
- c*, a bull-like, puffy neck ;
- d*, indented, pointed spine ;
- e*, short narrow ribs. not much bent ;
- f*, a short, thick tail ;
- g*, thin, long, bristly hair ;
- h*, unequally vaulted udder, with a few long hairs ;
- i*, teats of unequal length and thickness ;
- k*, hind legs, like those of a goat, bent in the form of a sickly ;
- l*, thin lacteal veins, almost imperceptible, without a fork, terminating in a point, and without any or with a very small and shallow indentation at the end.
- m*, the milk-wart, when nearer the throat than the lower lip or chin.

Among all these favorable and unfavorable signs, there is not one which by itself is decisive, but several of them must concur ; besides this, they do not indicate the yield of milk, and still less the duration of this yield, from the time of calving to the period when the animal goes dry. Nor do we find in them any guide, not even a hint, what male animals are to be selected for the propagation, to sustain the productiveness of the breed, or to increase it by improvement.

Mr. Guenon's discovery is useful to many in selecting a cow that will give the largest and different quantity of milk. So far as it corresponds with the natural laws of physiology, I am willing to credit it, but no further. To them as a principle he makes no claim, but attempts to show that a long head and broad mouth, with a dish face should be selected as the most favorable marks ; he further adds that straight hind legs and a long tail are good marks of a good milker. What says the laws of Physiology ? Let us see how his principles will agree with the largest and most thrifty milkers of America, including the long and short horned cattle, and we will see it is also most important to regard the color in selecting cattle. The white is better for the South, red Devon for the North, in order to endure the severe winters of that latitude. But the largest and finest of all animals are of the crossed or mixed color, or in other words, rhone or spotted ; or to go further and add still another color, black, which makes what is commonly known as brindle, is yet more desirable and adds to its value. Examine the head of these cattle and you will perceive the failure of his principle. The largest head has the longest horn, but is not so desirable as the short head.

This doctrine applies to animals in general, the hog having the shortest head and sharpest mouth, are the most growthy, and the best milkers. A sow will suckle six pigs, affording nourishment enough to increase the weight of each one of them a pound a day, making in the aggregate six pounds per day. The best sheep have short heads, full faces, and small mouths, in this class are found the best milkers. As for their legs and tails, they have no regular forms or length. An evidence of the quantity of milk they produce is found in the rapid growth of their lambs, in many instances growing at the rate of a pound a day.



The Southern Cow.

This is a good Southern specimen, and would suit to cross with the Short Horn.

Here are some doggerel lines, which so well express the greater number of the good points of such a cow as we have

been now describing, that we are tempted to copy them from the Farmer's Magazine:—

She's short in her face, she's fine in her horn,
She'll quickly get fat without cake or corn;
She's clean in her jaws, and small in her chine,
She's heavy in flank, and wide in her loin.

She's broad in her ribs, and long in her rump,
A straight and round back, without even a hump;
She's wide in her hips, and calm in her eyes.
She's fine in her shoulders, and thin in her thighs.

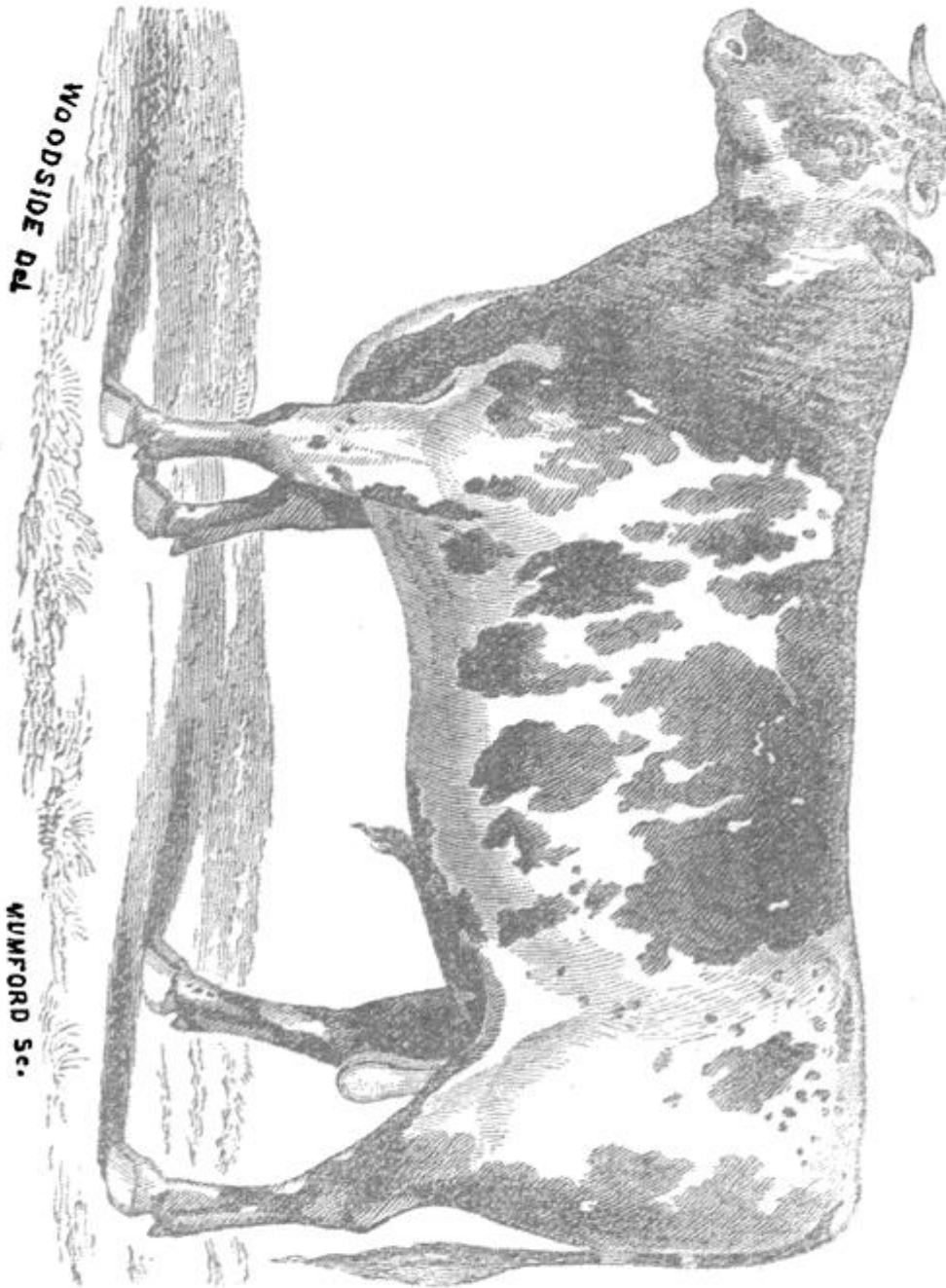
She's light in her neck, and small in her tail,
She's wide in her breast, and good at the pail;
She's fine in her bone, and silky of skin—
She's a grazier's without, and a butcher's within.

Her colors are rich and bright,
Varying in their hues,
And of black, red, and white,
And her superiority is improved by sun-light.



Diseased and Imperfect Cow.

The cow I here represent is a specimen of an imperfect one—face round and rough, with big mouth, tapering of the head is wanted, strength wanting, neck too small, the back narrow, the hips and thighs too small, and colors are deficient. All show want of strength and health.



This is a good bull, and suitable to cross with any other breed.

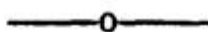
The cross and the superiority is, that one animal is superior in frame, bone, and muscle ; another, the fattening qualities. The Brahmin hump is a mark of good thrift, the high head, superior back and hips, and colors of the richest kind. The cross with others, the superior growth, the bones is small, but this is given by the cow.

(See cut, on following page.)

This is a very superior Short Horned Bull, and suitable to cross with any other cattle.



In selecting the best breeds of horses, cattle, and hogs, you should be careful to remember the four temperaments heretofore alluded to, and the colors as given—white, red, and black, with the bridle. The white animal fattens faster than any other color, and endures the heat of the sun, but not the cold, rain, or snow. The red is usually remarkably smooth and hasty, but not so large as the white, but endures the rain, cold, and snow, much better. The black in the sun, suffers more from heat and fevers than either of the others, and owing to its thin skin, is not able to endure so much cold. By crossing and intermixing these colors you will greatly improve the breeds, and carry out the laws of nature. The red gives the muscle, white the flesh, and the black the bones. Also in their food, grass gives muscle and bones, while grain is better adapted for creating the fat—which shows conclusively that the laws of nature demand that they should be taken together. When fed upon grain alone they become diseased.



THE SHEEP.

“*A Method of obtaining a greater number of One Sex, at the option of the Proprietor, in the Breeding of Live Stock, Extracted from the Quarterly Journal of Agriculture, No. I. p. 63.*”

“In the *Anales de l’Agriculture Francaise*, vols. 37 and 38, some very interesting experiments are recorded, which have lately been made in France, on the breeding of Live Stock. Mr. Charles Girou de Buzareingues proposed at a meeting of the Agricultural Society of Severac, on the 3d of July, 1026, to divide a flock of sheep into two equal parts, so that a greater number of males or females, at the choice of the proprietor, should be produced from each of them. Two of the members of the Society offered their flocks to become the subjects of his experiments, and the results have now been communicated, which are in accordance with the author’s expectations.

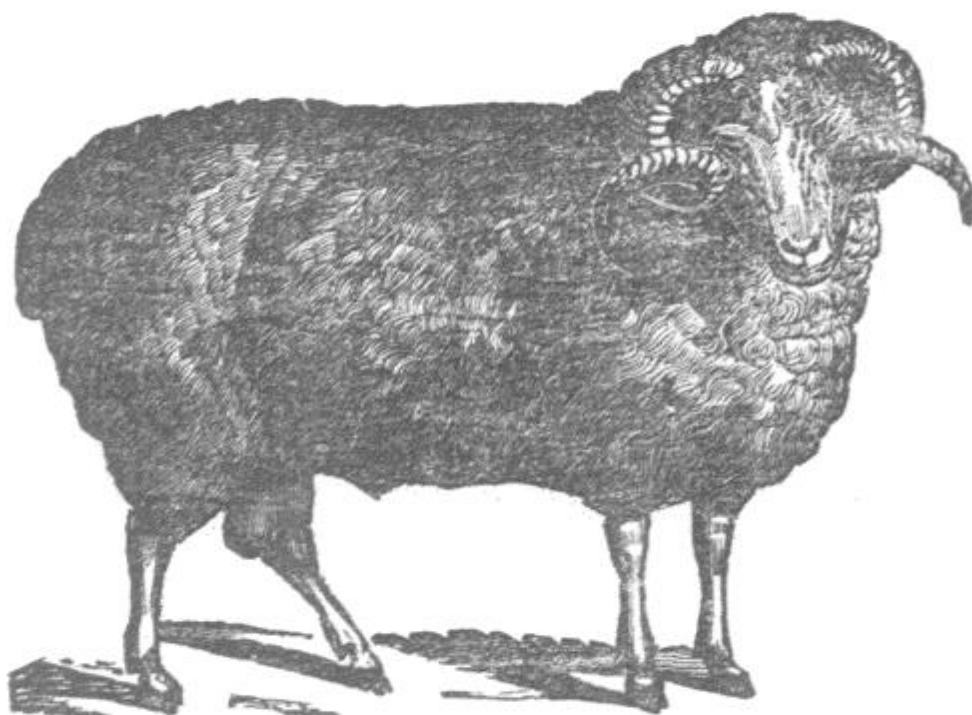
“The first experiment was conducted in the following manner: He recommended very young rams be put to the flock of ewes, from which the proprietor wished the greater num-

ber of females in their offspring; and also, that, during the season when the rams were with the ewes, they should have more abundant pasture than the other; while, to the flock from which the proprietor wished to obtain male lambs chiefly, he recommended him to put strong and vigorous rams four or five years old. The following tabular view contains the result of this experiment :

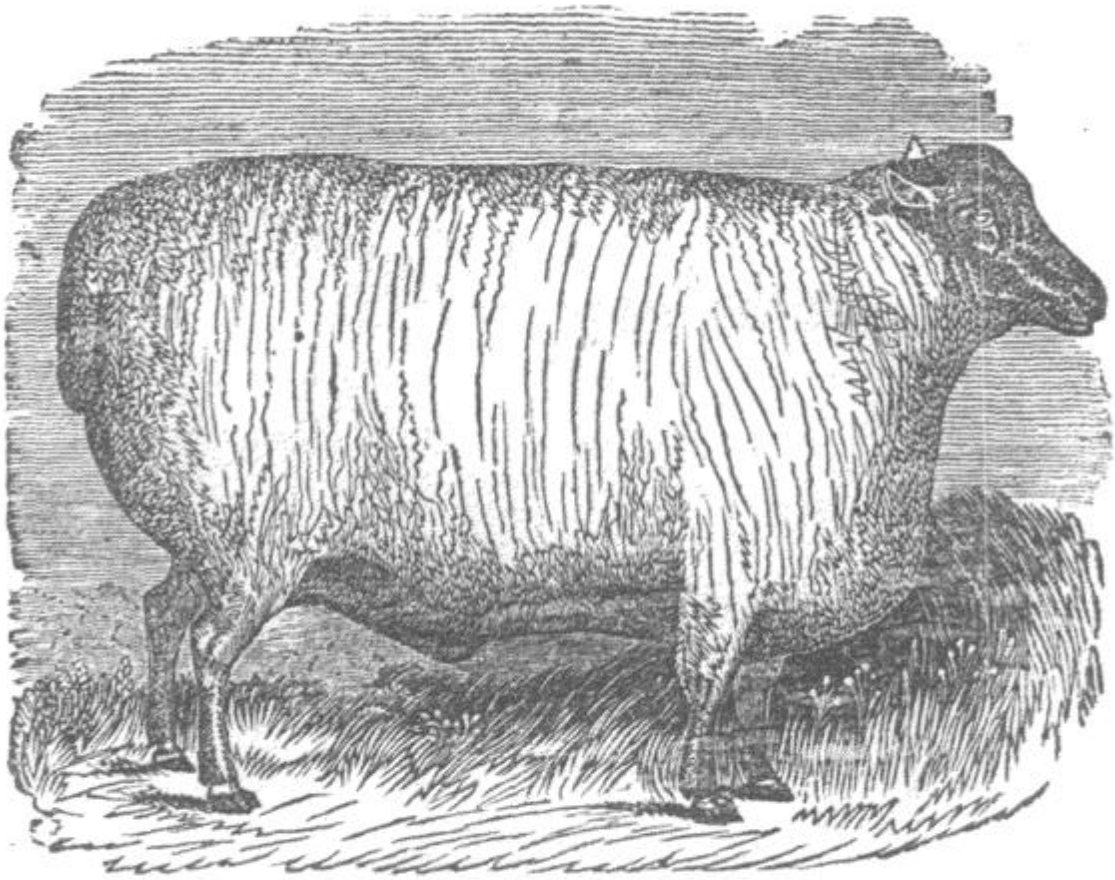
<i>Flock for Female Lambs.</i>			<i>Flock for Male Lambs.</i>		
Age of Mothers.	Sex of Lambs.		Age of Mothers.	Sex of Lambs.	
	<i>Males.</i>	<i>Females.</i>		<i>Males.</i>	<i>Females.</i>
Two years, -	14	26	Two years, -	7	3
Three years, -	15	29	Three years, -	15	14
Four years, -	5	21	Four years, -	33	14
	—	—		—	—
Total, - - -	35	76	Total, - - -	55	31
Five years and older, - - -	18	8	Five years and older, - - -	25	24
	—	—		—	—
Total, - - -	35	84	Total, - - -	80	55
<p>N. B.—There were three twin births in this flock. Two rams served it, one fifteen months, the other nearly two years old.</p>			<p>N. B.—There were no twin births in this flock. Two strong rams, one four, the other five years old, served it.</p>		

“ The general law, as far as we are able to detect it, seems to be, that, when animals are in good condition, plentifully supplied with food, and kept from breeding as fast as they might do, they are most likely to produce females. Or, in other words, when a race of animals is in circumstances favorable for its increase, nature produces the greatest number of that sex which, in animals that do not pair, is most efficient for increasing the numbers of the race : But, if they are in a bad climate or on stinted pasture, or if they have already given birth to a numerous offspring, then nature, setting limits to the increase of the race, produces more males than females. Yet, perhaps, it may be premature to deduce any law from experiments which have not yet been sufficiently extended. Mr. Girou is disposed to ascribe much of the effect to the age of the ram, independent of the condition of the ewe.”

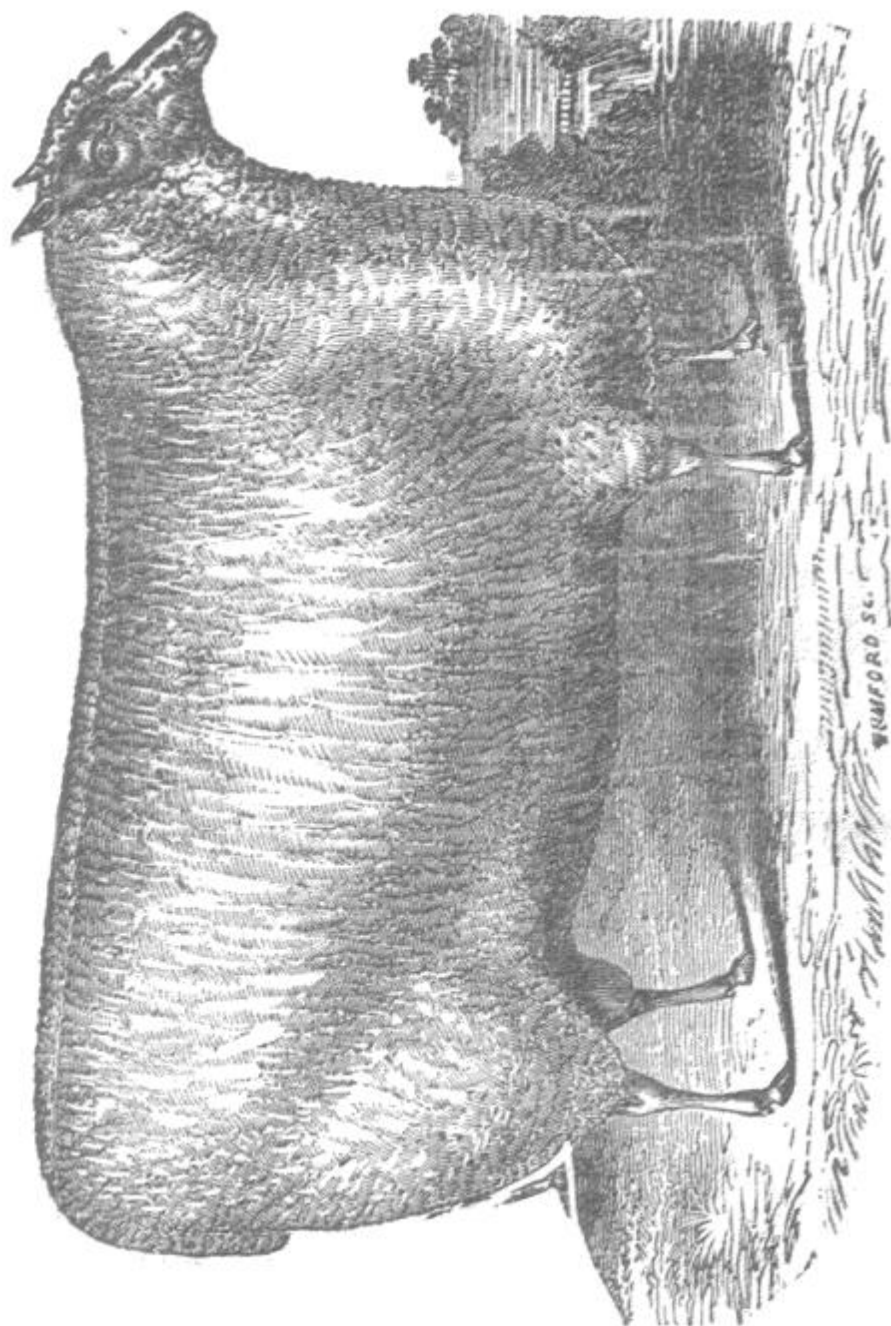
A gentleman of experience informed me that by putting the bull to cows with empty bags in the morning, would have a male calf, and by putting him to a cow with full bags, would have have a female calf. I offer this to support my opinion that a mare put to a stallion and fiery horse, would in the morning have a male colt, and when the mare was weary, warm, or feverish, would be a mare colt. Remembering that the ages of the animals and all the combined circumstances, will give you success.



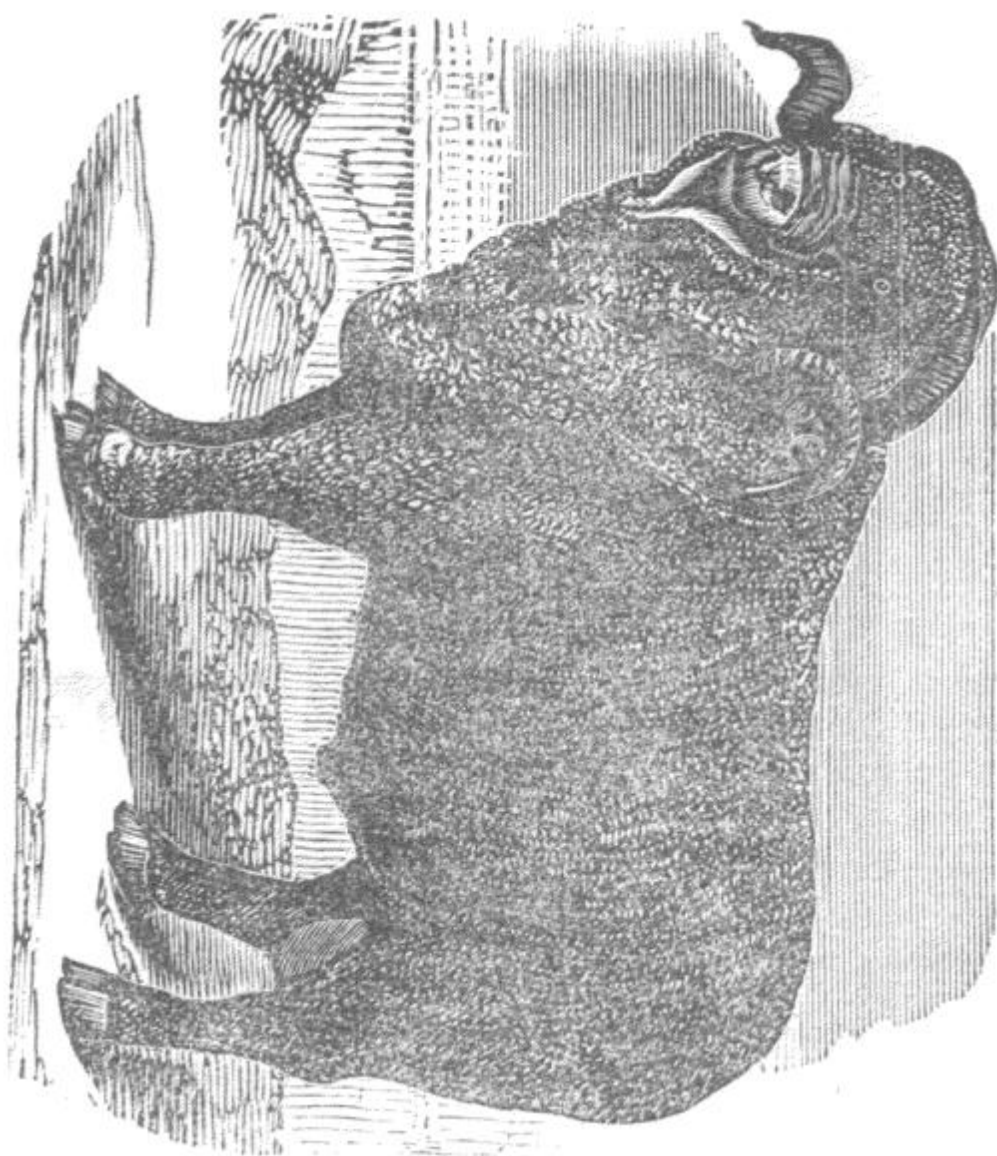
Merino.—(Fattens well.)



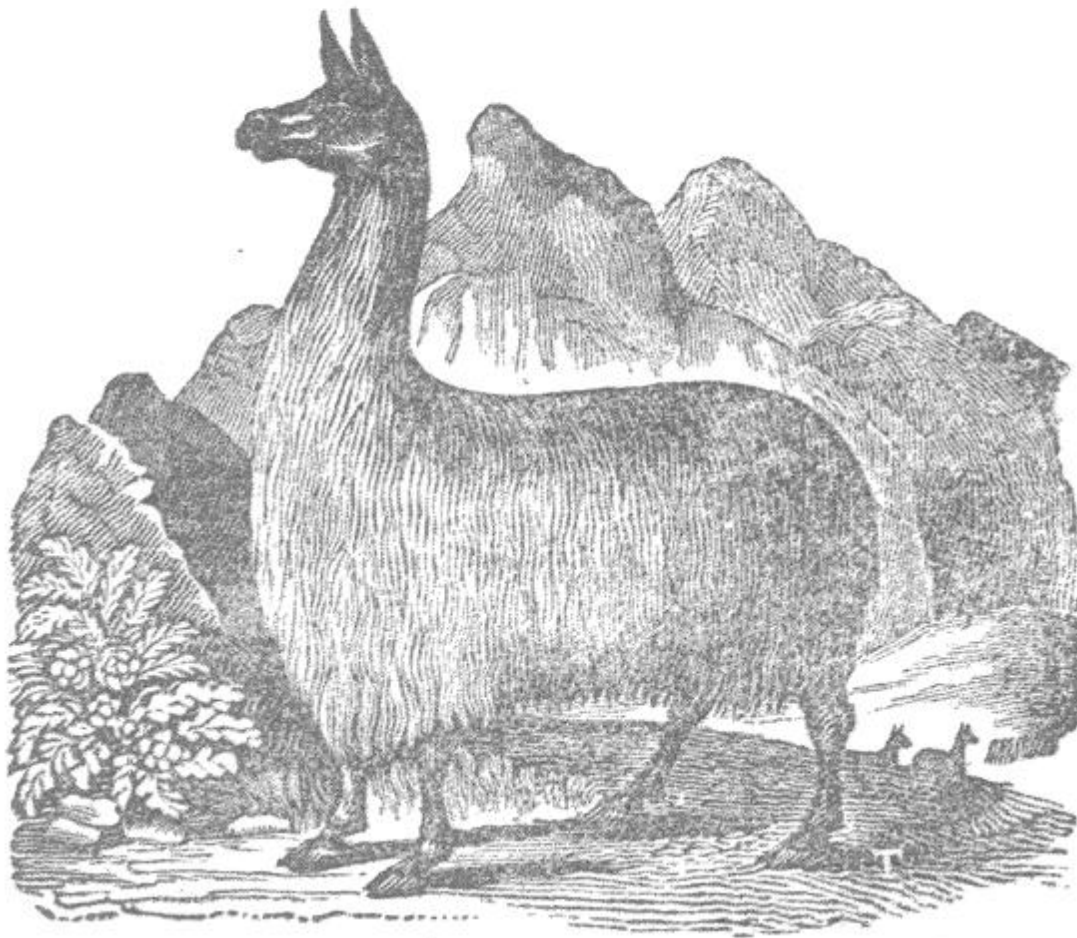
The New Leicester.



Cottswool Ram.

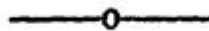


French Merino.



The Alpaca.

The Alpaca is the tallest sheep, with the longest neck below the eyes; his face is not full enough, and the best cross with the French Merino or Cottswool would improve the size above all others.



Profits of Sheep Breeding in Countries that have large Prairies, Woods, Grass, Herbage, and Cane Brakes.

In places of this character the animals will thrive best, and needs no assistance from man, as nature will always supply a sufficiency. South of 35 degrees latitude the sheep will be found more productive and healthy, which is owing to the freshness of the pasture, and they breed much more frequent, as often as twice a year, and frequently at the end of the year the lamb has a lamb. Thus it will be seen that you can have three lambs from one ewe during the year. If you select twin lambs for rams and repeat the crossing, you will

have more than one-half or two-thirds of lambs. I have seen half of the flock twins, which will make a profit of 200 per cent in the sheep, and 200 per cent in the wool. If you cross them on a superior stock, there will be an additional gain of 200 per cent. I have seen a flock of sheep in Texas on the Brazos river, in which there were two ewes that had fifty-two sheep in four years. The entire expense of keeping sheep, as above described, is only the cost of the feeding of the dogs, and the salt to keep them in health.

(From the United States Agricultural Journal.)

GROW MORE WOOL.

Our own experience and observation have satisfied us that there is no kind of farming that is so generally profitable as raising sheep and wool. It matters not whether you are upon the bleak mountains of Vermont or in the fertile plains of Texas; upon the prairies of the West, or the now solitary hills and mountains of the South. Everywhere and anywhere the sheep will live and thrive, and with proper care pay more for the labor and capital invested than any other animal, or any other system of farming. It is one of the most useful and economical machineries which has been given us to convert the vegetation of the farm to money. Were it for the first time presented to us, we should consider the sheep one of the most wonderful animals nature has produced for the use of man. Its annual growth of wool, so admirably calculated for human clothing, and used in every portion of the globe—its skin and flesh, and in many localities its milk, all serve for the necessaries or luxuries of man.

There is no animal in which there is so little waste or so little loss. Of all other animals the cow comes nearest to the sheep in the profit it returns to the farmer, for if well cared for, it will pay for itself each year by the milk it yields, and defray also, a portion of the cost of keeping. But the sheep, for at least seven years of its life, will give an annual fleece each year equal to the value of the carcass; and the yearly increase will be nearly or quite equal to the cost of keeping, giving as a general thing a profit of cent per cent.

Is there any branch of farming or any other legitimate business that will yield for a series of years a profit of ten

per cent? We assume that there is none. The very idea that profits of 50 per cent. would be realized in any branch of business, would set the whole capital of the country in motion. Farms would be sold, merchants would sell off their stocks, bankers close their banks, and indeed everybody who had money to invest would rush into this gold mine.

We aver without fear of contradiction, in truth, that where any kind of farm animals can find subsistence, that sheep if properly attended to, will give a net profit on the investment of at least fifty per cent., and that with the ordinary management of farms, it will give some 20 to 40 per cent.

That there is no danger of overdoing the business we have shown repeatedly in previous numbers. The annual increase of population in the Union, requires the wool from three millions of sheep, so that to clothe the increased population would require an annual increase of sheep equal to *four millions*.

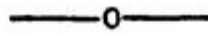
But when we come to consider that there is now an annual deficiency of over *seventy millions of pounds*, there can be no doubt that the wool-growing is the most stable pursuit that can be engaged in. We cannot glut the market, nor will there be any long time that the market will be depressed beyond the profitable point of production. On the contrary, it is certain that no farm product goes less often below this point than wool. It has long been a source of constant wonder to us, that so many farmers in Ohio and the Western States neglected the sheep, for the very precarious business of grain growing. Every year will give them a crop of wool if they but take care of their sheep. But there is no certainty for wheat, prepare the good ground ever so well. If we have been rightly informed, the wheat raised in the West, has cost the farmer more than he has obtained for it in the market. Too much dependence has been placed upon this most uncertain and expensive crop. We have tried wheat growing, upon probably, as good a wheat farm as can be found in Western New York; and we have also tried sheep on the same farm, and we are free to confess that although we have a good market at our own door, yet we can raise a given amount of money quicker, and much easier with a flock of sheep than with wheat. But we find it well to raise both sheep and wheat, as by that means we find we get better profit than to be confined to either alone, while indeed most land, that can be plowed, is the better to come at regular, and not long, periods under the plow. With us in this re-

gion, four years is as long as it proves profitable to leave land to grass. Very few resort to naked fallows. Some mow their clover early and let it grow till August, when it is turned under, cultivated, and sown to wheat; others mow the first year and pasture with sheep the second, and then plow. Every good farmer keeps a few sheep at least. Very many who have been in the habit of putting up a large quantity of pork for summer use, now select out a few wethers, and give them extra keep and make their summer meat of mutton—decidedly the most healthful meat that can be used fresh, and thus realize the money for their pork fresh.

The inducements to grow more wool are, a sure market, less fluctuation from the point of profitable production than any farm product, a larger interest or profit on the capital invested than any other business, and therefore the best business as a general thing the farmer can follow.

T. C. PETERS.

—*Wool Grower.*



THE HOG.

How much Pork will a bushel of Corn make.

This will depend on the quality of the hog, the water he has, and the weather and field he is fed in. The spring, or in mild and pleasant weather, and the privilege to seek his own desires on the variotts grass and roots. This I consider an important question, as experience clearly proves. Writers often contend for souring the food; why is it that animals fatten faster on sugar cane and molasses than any other food. I urge all to notice the importance of change of diet, as it is, to a certain extent, a medicine. The growth of all animals is to partake of the several qualities of food; certain parts gives bone, another the muscle, another the fat, another the fluids. What grain will give the best proportions to animal life is yet an unsettled question.

This I consider an important question, and one that all farmers ought to be able to answer. I will answer the question by giving the result of an actual experiment, which is the only way of obtaining correct information. Some years

ago I was desirous of obtaining information as to the best mode and most profitable way of fattening hogs. I inquired of my neighbors and found some in favor of close-floored pens and others large dry lots, and as to the amount of pork a bushel of corn would make, their opinions were as various as their countenances. I was just beginning to farm, and as I was desirous of knowing the best way of fattening hogs, I determined to try the different plans; and also how much pork a barrel of corn would make. I made a floored pen and covered it in, weighed three hogs and put them in the pen; I also weighed three others of the same size and put them in a dry lot, (average weight 175 pounds,) I fed six barrels of corn to the six hogs; they were forty days eating the corn, with plenty of salt and water. Their average gain was 75 pounds. The hogs that was fattened in the lot gained the most, one gained 88 pounds, one in the pen gained 84 pounds. the other four were not so thrifty. These hogs were about fourteen months old when slaughtered; I put them up the 25th of October, there was a good deal of sleet and snow during the month of November, which gave the hogs in the pen an advantage they would not have had if the weather was favorable; they ate the same quantity of grain in the same time. It also shows that the six barrels of corn made \$11,25 worth of pork at $2\frac{1}{2}$ cents per pounds, and the farmer gets $12\frac{1}{2}$ cents for his labor for feeding per bushel, over selling at 25 cents per bushel. Hogs will fatten faster in September and October, than they will in colder weather. A few years ago I fed one barrel of corn to a very fine Berkshire hog that was about thirty months old, in the months of August and September, and he gained 97 pounds in 35 days, which was the length of time he was eating the barrel of corn. He ran on a clover-field which was a great advantage to him.

This last experiment is considerably over an average and would not hold good with common hogs. From the above experiment it will be seen that $3\frac{3}{4}$ pounds of corn, (supposing the corn to weigh 55 pounds to the bushel,) will make 1 pound of pork. Mr. Arnott thinks this will not hold good with an experiment. Subsequently observation has satisfied me that the foregoing experiment as detailed, will do to practice upon. Another very important question or inquiry suggests itself from the foregoing, and that is, what is it worth to raise hogs to the average weight of 175 pounds.

A correct answer to this question, based on actual experiment, would be of great importance to farmers. To value the

grass, clover, and grain fields that the hogs feed on while growing to a gross weight of 180 or 200 pounds is scarcely susceptible of being arrived at by experiment, yet with their assistance I can raise a hog of 175 pounds and over with one barrel of corn. It will be seen from these estimates that two barrels of corn, with the advantage of grass and grain fields will produce about 200 pounds of net pork, or 250 gross. Estimating the corn at 25 cents a bushel, this would give the farmer \$1,50 for his grass, grain, fields, capital, stock, and his labor. To sell corn at 25 cents a bushel is very unprofitable business, when we take into consideration the wear of the land and pork at \$2,50 per 100 pounds. If we take into count the absolute necessity of clovering our land and improving it, I have no hesitation in saying that it is better for the farmer to raise pork at \$2,50 than to sell corn at 25 cents per bushel.

Hogs do best in large fields with plenty of water, and the farmer now cuts up his corn in the months of September and October, and he will be amply paid for his labor in the improvement of his land for the sake of the manure of the hog. It is a great saving of labor to turn the hogs in the field when the hogs suits the size of the field.

W. M. JACKSON.

FAYETTE, Mo., *August* 10, 1853.

The Farmer's Magazine says, "I am indebted to a worthy and sensible friend, and a friend also of the poor, for the following estimate of what I shall term "pig population," and set it in array against the increasing demands of the home population, which goes on at the rate of not quite $1\frac{1}{2}$ per cent per annum—nay little more than $1\frac{1}{4}$, by the last ten years' census. I think with the assistance of my above-mentioned friend, I can feed the supernumeraries well, and in this way, at any rate, save their bacon. Would you credit the assertion that in ten years—ten short years—that from two breeding sows many millions can be produced? Would you suppose (for I had no conception of the fact,) that more than the present, or even anticipated population of the country for ten years to come, is not equal to the number of pigs to be thus born and bred in the same short period, if we choose? But I shall proceed to the proof and give the figures, which are unanswerable arguments when well founded.

His calculation then, is as follows, viz: that in one year, two sows (one year old) will breed ten each, of which we shall assume that one half are females, and so proceed on that assumed equality:

The first year there will be males and females	-	20
From which take males	- - - - -	10
We have the result as breeders	- - -	<u>10</u>
At the second year then, we may fairly take the same ratio of ten to each, viz:	- - - - -	2)100
And it gives 100 males and females, leaving for the third year	- - - - -	50
(I shall now drop the text, and merely give the figures, the same principle applying throughout,		10
		<u>2)500</u>
		250
		10
The fourth year	- - - - -	<u>2)2,500</u>
		1,250
		10
Fifth year	- - - - -	<u>2)12,500</u>
		6,250
		10
Sixth year	- - - - -	<u>2)62,500</u>
		31,260
		10
Seventh year	- - - - -	<u>2)312,500</u>
		156,250
		10
Eighth year	- - - - -	<u>2)1,562,500</u>
		781,250
		10
Ninth year	- - - - -	<u>2)7,812,500</u>
		3,906,250
		10
Tenth year, males and females	- - - - -	<u>39,062,500</u>

I hope my friend has brought his pigs to a good market; but to equalize the supply, I shall for the present purpose, take only the male half of the pig population for food, leaving the breeders to go on. In this way we can kill and eat ten the first year (no bad increase from two sows, recollect);

the second year 50 ; the third year 250 ; the fourth 1,250 ; the fifth 6,250 ; the sixth 31,250 (pork in abundance now) ; the seventh 156,250 ; the eighth 781,250 ; the ninth 3,906,250 ; and the tenth (when divided in like manner,) the enormous number of 19,531,250 for food, without interfering with the breeders, who I presume by this time, will probably need killing also. Now I am not aware that much commentary is necessary on this prolific subject ; every man who reads this work will at once draw his own conclusion from the facts.

Berkshire Hog Constitution.

MESSRS. EDITORS—We send you a plate, and a short account of a Berkshire hog, bred and fed by us, of which the above plate is a good likeness, with the exception of his having four white feet, and a small strip of white in his face. He was put up to fatten on the tenth day of September, at which time he was calculated to weigh from one hundred and thirty to one hundred and sixty pounds alive—he was slaughtered on the twenty-fourth of February last, and weighed six hundred and twenty-six pounds. Supposing his dead weight at the commencement of fattening to be one hundred and thirty pounds, which we are confident if an error, it is on the favorable side—it gives him an increase of four hundred and ninety-six pounds, in one hundred and sixty-six days. His weight we do not think so very extraordinary, only in his attaining it in so short a time. It is our impression, that he would have attained the weight of eight hundred pounds, had the season of the year warranted us in keeping him two months longer.

He measured in height two feet eight inches ; from his ears to the root of his tail, four feet eleven inches ; round the body back of his shoulders, seven feet one inch ; breadth over his shoulders, two feet four inches—over his loin, two feet two inches—when clove down the back he measured one foot four inches deep on the shoulder, and his hams weighed sixty, and sixty-one and a half pounds, which are all lean with the exception of about one and a half inches only of fat on the outside.

We wish at the same time, to inform those subscribers to your invaluable journal, who are breeders of Berkshire pigs, two boars and two sows, selected by him expressly for us, re-

gardless of trouble and expense, with a view of carrying forward and improving on the properties of those hogs, previously imported by him, of which we held a good sample. They are in color similar to those formerly imported, and sent out by the same gentleman. To give a minute description of them, would be unnecessarily encroaching on your room, as every individual either personally acquainted with Mr. Hawes, or possessed of some good hogs, descended from his importations, is no doubt convinced of his good judgement, and will readily admit their claim to superior excellence.

We shall have six or eight litters of pigs to dispose of, the present spring, the produce of four different boars, (one imported,) between which there are no connection, which will enable us to select our pigs for customers ordering them by letter, from different sires, and dams, which will be an advantage as regards their future progeny.

We are most respectfully,

A. & G. BRETNALL.

Canterbury, Orange, Co. N. Y.

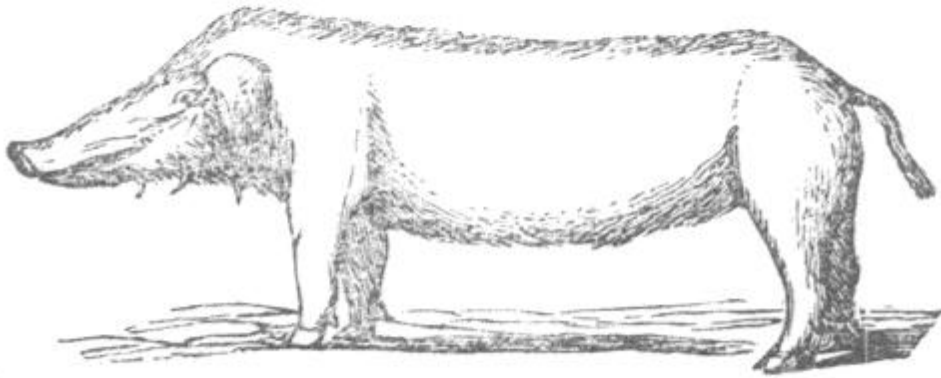
A certain Cure for the Scours.

I had a mare that had the scours so bad, that it reduced her to such a state of debility, that she could not get up and down; and the final result was, that her hoofs came off, and new ones grew out. I tried every thing that I had seen prescribed in the Farmer and Cultivator, without success. The young men that worked my farm, then procured the leaves and roots of the red, not the black raspberry, and made a strong tea of it, and gave it to the beast three times a day. In a few days she got upon her feet without assistance, and the result was, a perfect cure.

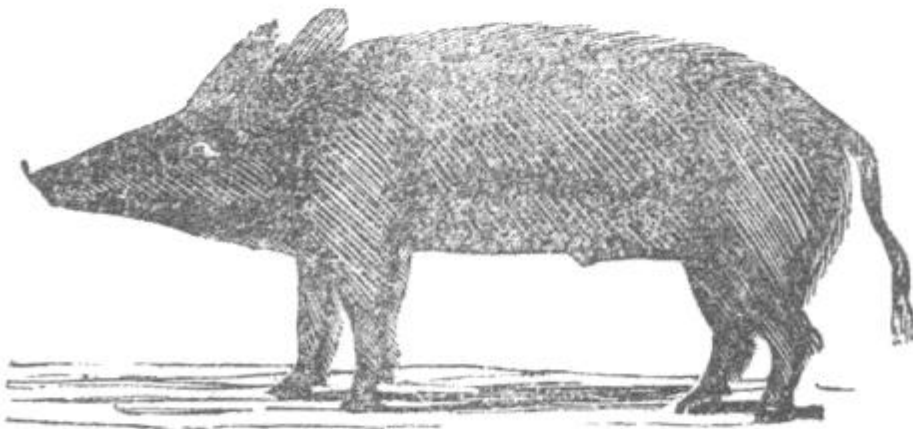
A. H. N.

A GOOD PIG.—Mr. Bailey Birge of Norfolk, Ct., lately butchered a pig eight months and twenty-one days old, which weighed when dressed *four hundred and forty-three pounds*.

The pig was a half blood Berkshire, crossed with some native breed. For sometime before it was butchered, its weight forbid its rising, nor could it see, unless the fat was pressed away from its eyes.



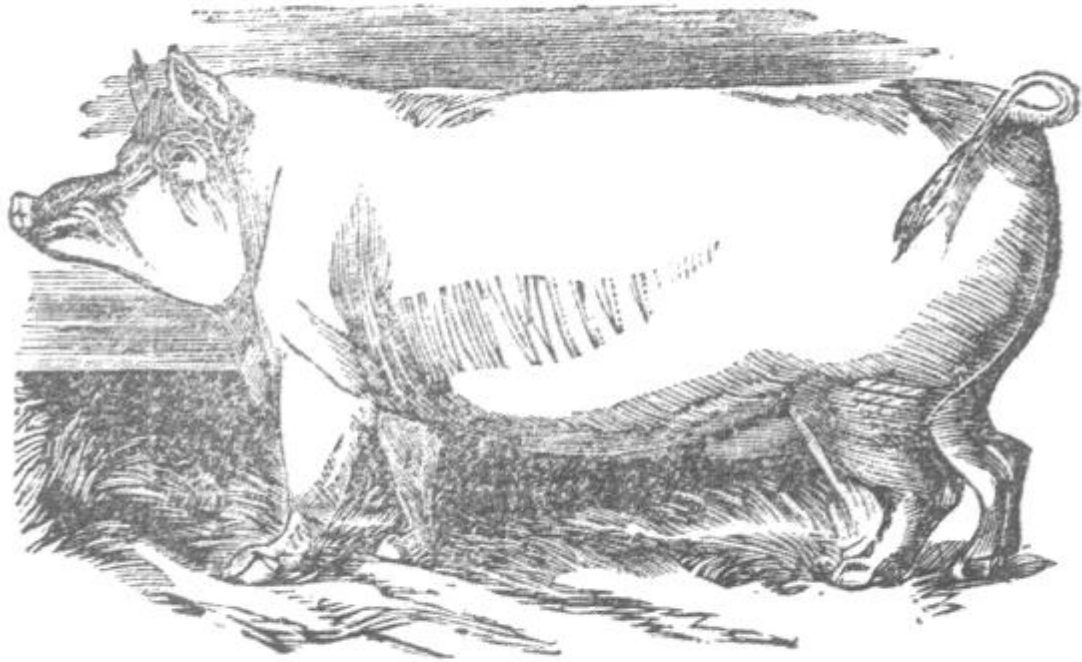
Alligator.



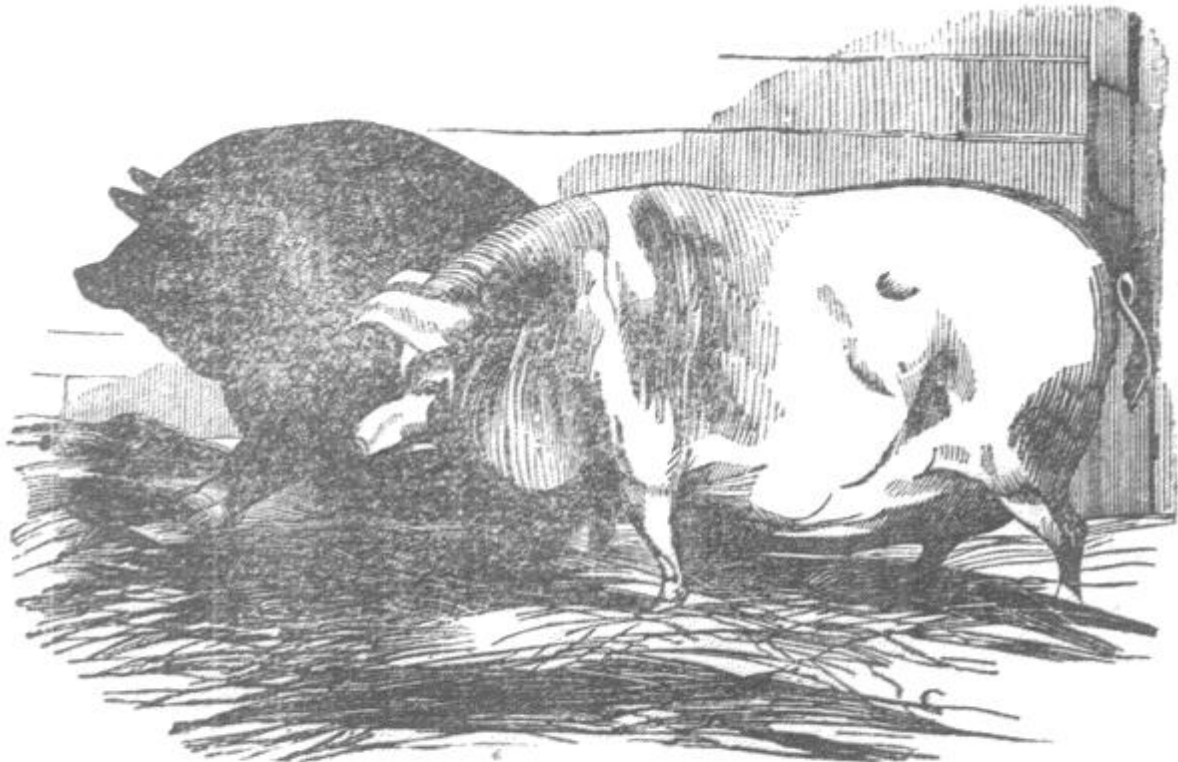
Landpik.



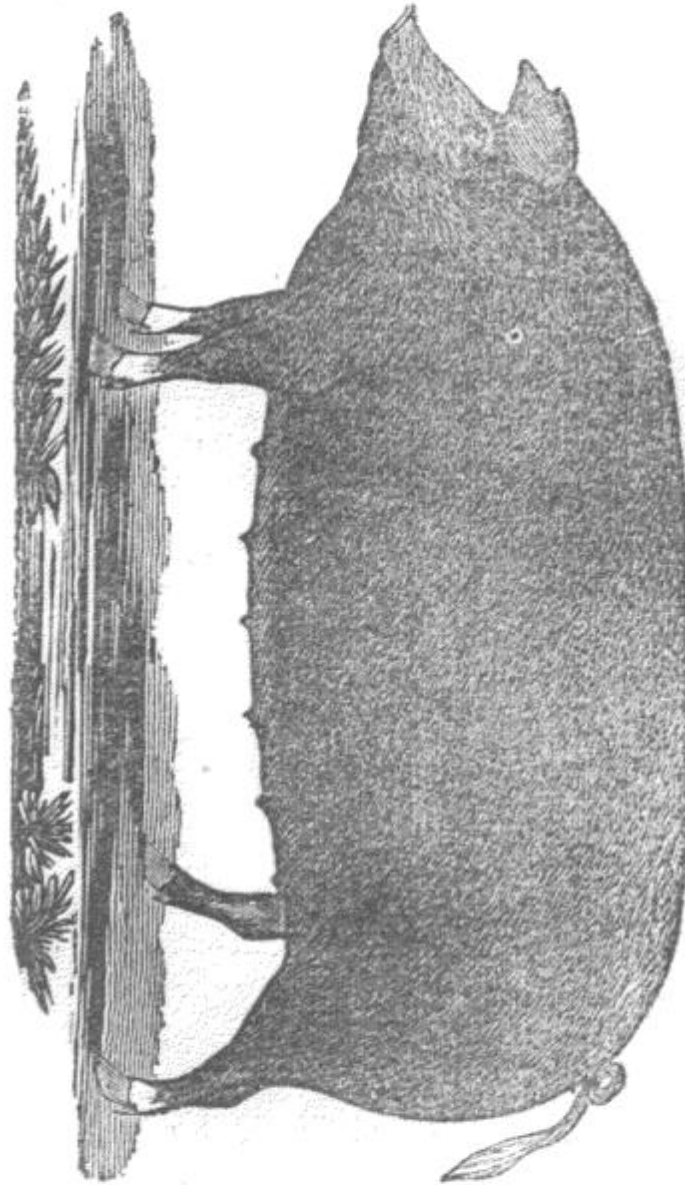
Wild Hog.



Berkshire.



Chinese.

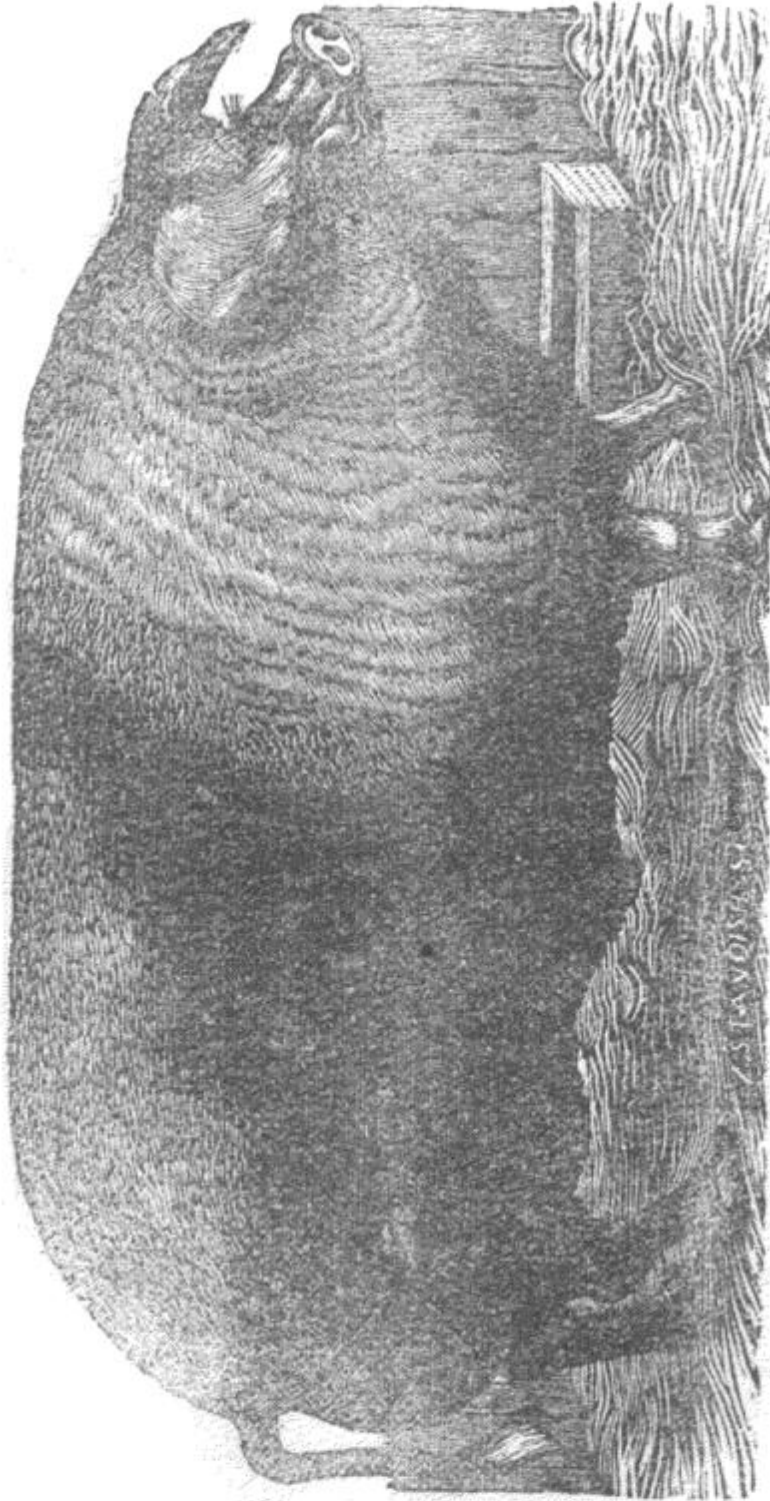
*Berkshire.*

What is the best form of the hog? 1st, short head; 2d, full face, from the eyes up. The round head gives a round body, but if the jaws (see Chinese hog, page 228) are very large, as represented in cut, the belly is too large. The cuts runs up to the most perfect hog with full face. The hog fattens to a dishface, but the best natural face is fullest; the length of the hog, like all other animals is the growth in front of the heart and full face. Length of the body and strength of the back depends on the strength at the joining of the neck to the head. Three colors in the hog is like the cow; the best is, white, red, and black. If all three is combined in one, the better, but two should be in all, to be the best quality. I hope what I have said will be your guide, and suit your own fancy to direct you.

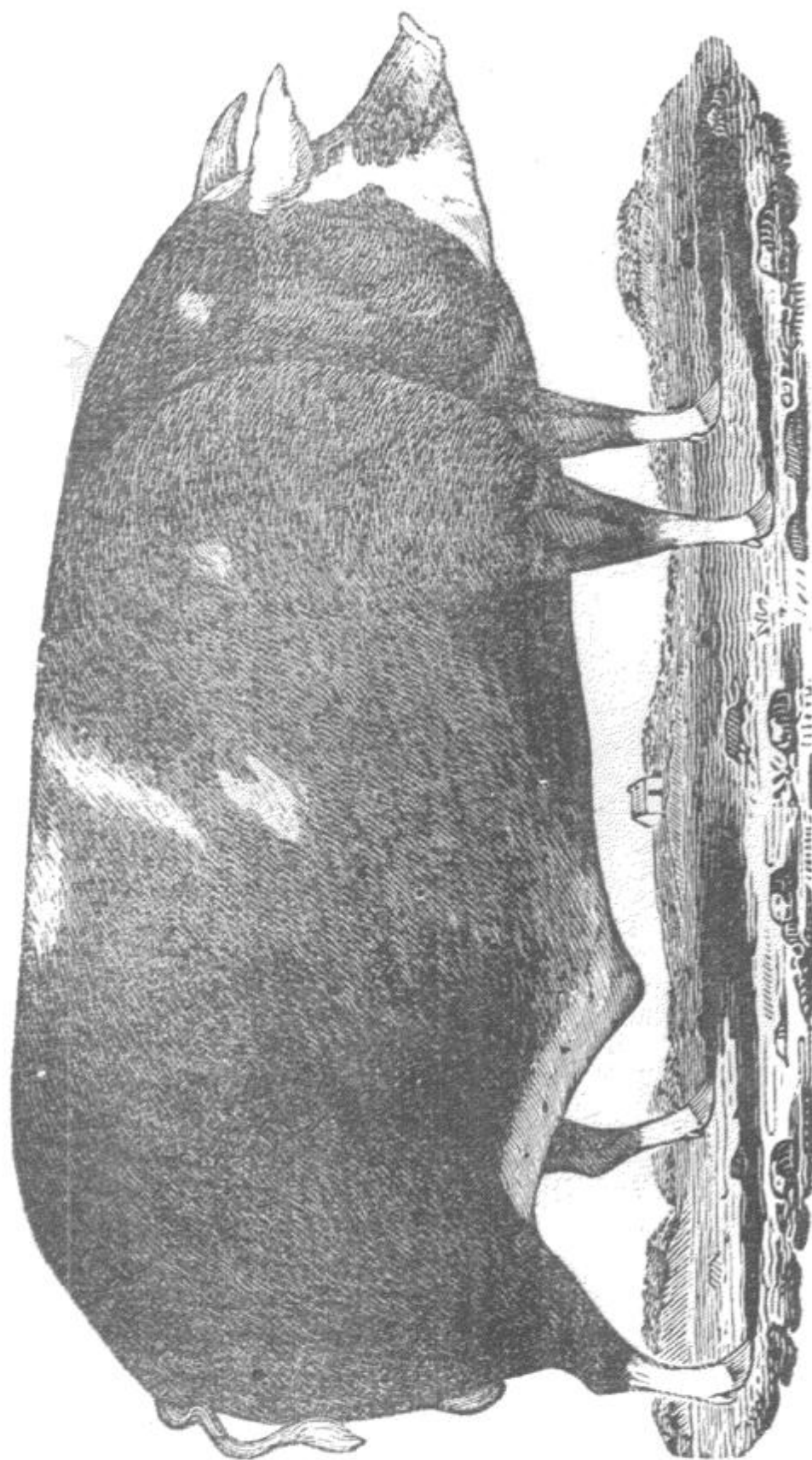


Best Food to Fatten Hogs.

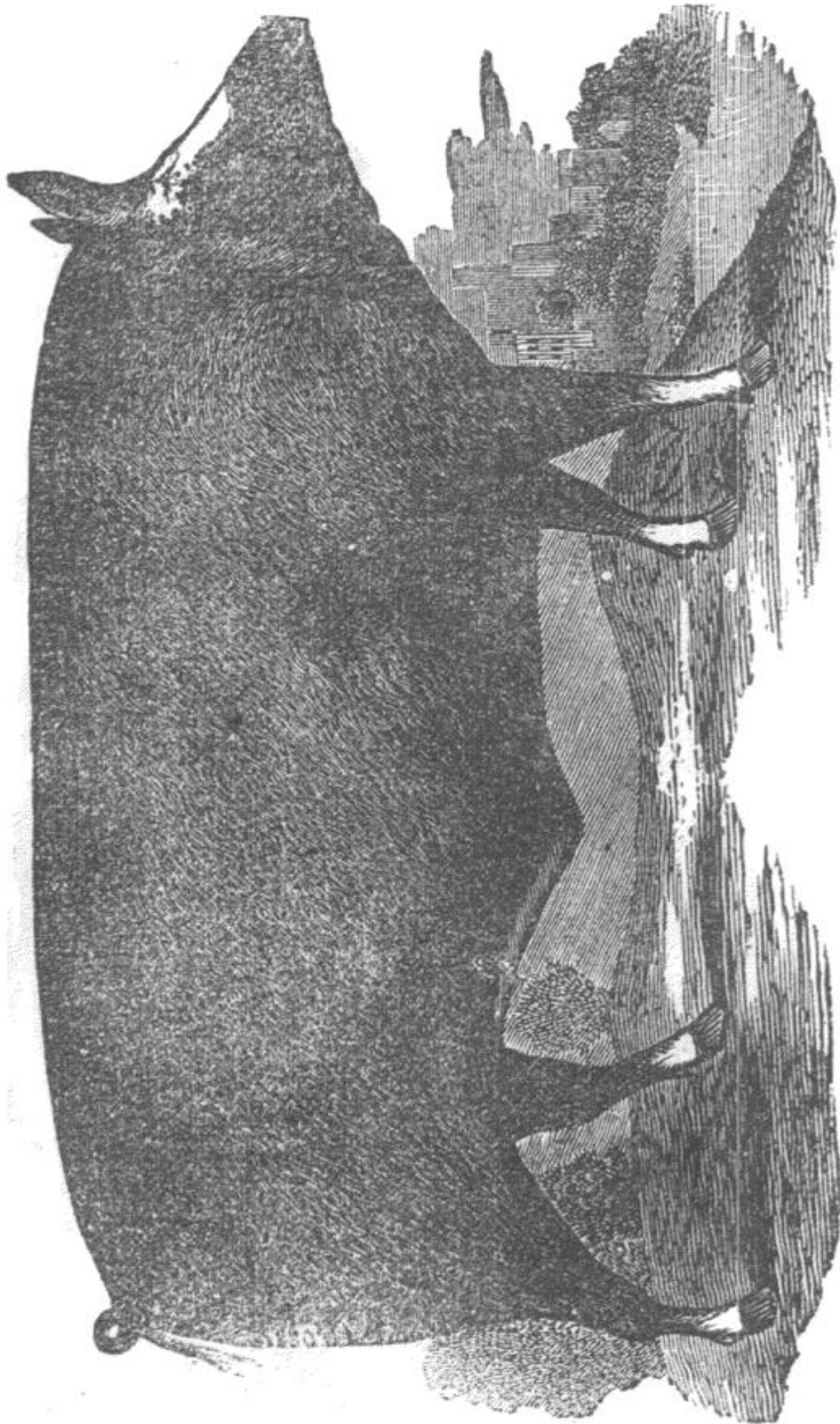
“Variety is the spice of life.” So in fattening hogs, a great deal depends upon the variety of their food, of which there are about 220 kinds eaten by them. This variety of food affects the different zones of the body, that is, the nerves, stomach, and bowels. Hence the greater variety of food, the faster the hog will fatten. Grain, roots, and vegetables are always desirable and necessary for the health of the hog. When fed on grain alone, hogs will fatten one pound per day, but give them grain, grass and roots together in abundance, and they will fatten two pounds per day. This truth I have fully tested, by giving grain with apples and grass. Spring water is best for drink, and all that makes them comfortable is to be given them.



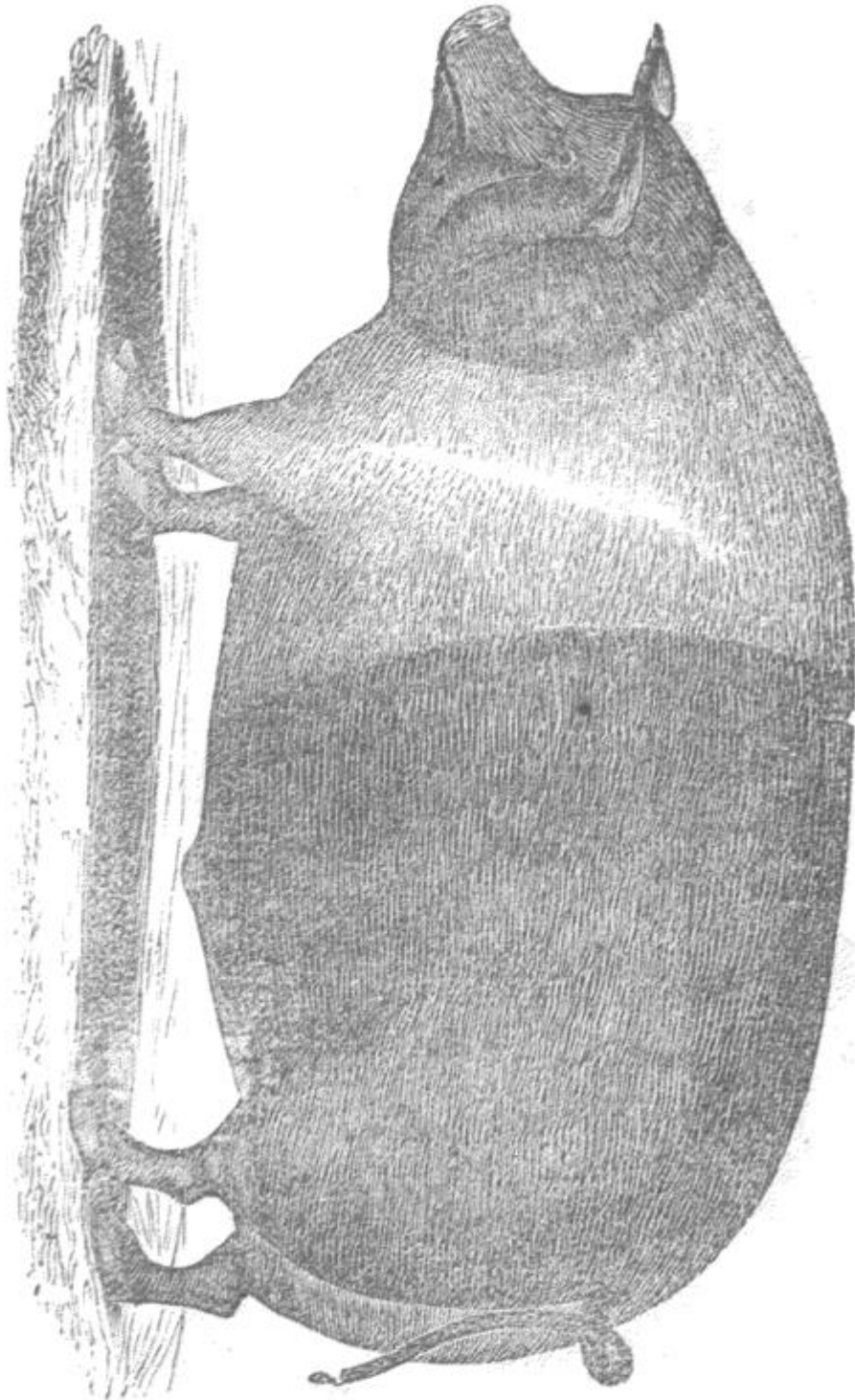
Berkshire.



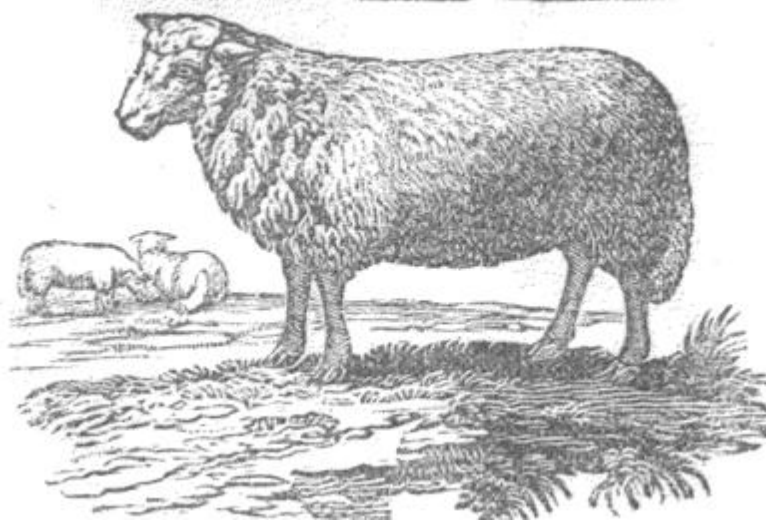
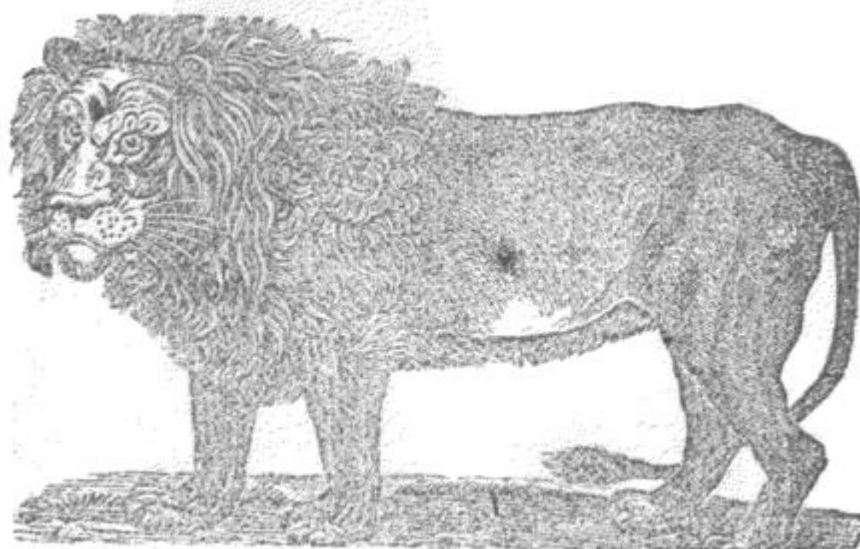
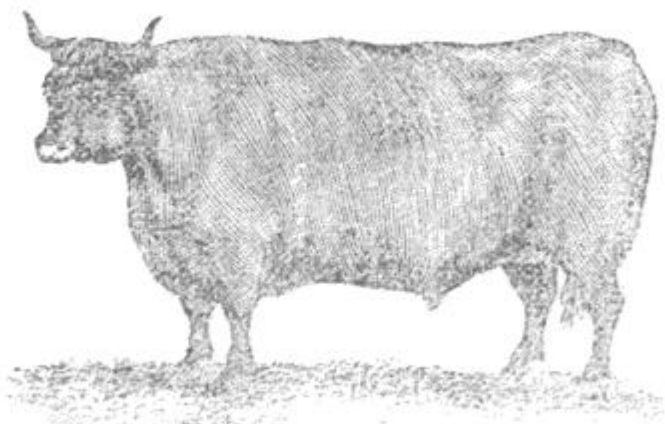
Woburn.

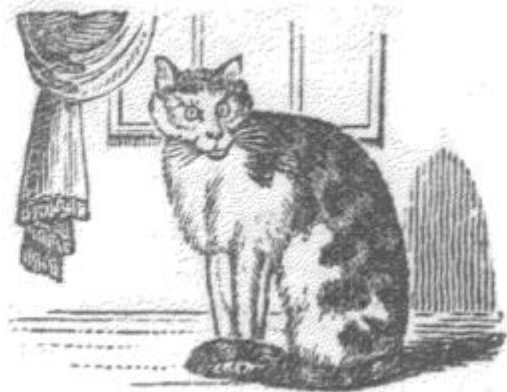
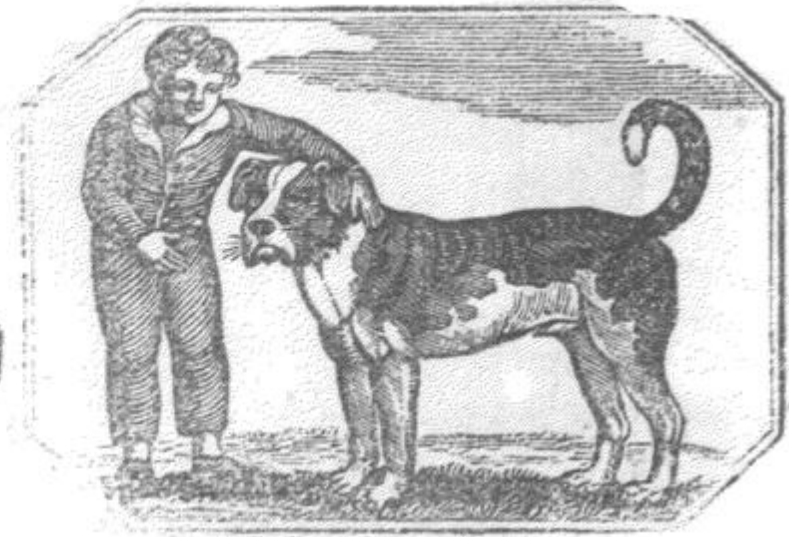
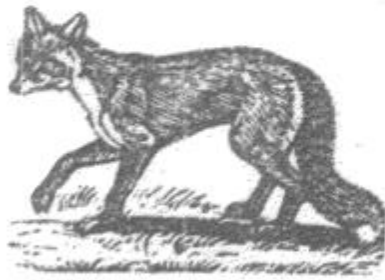
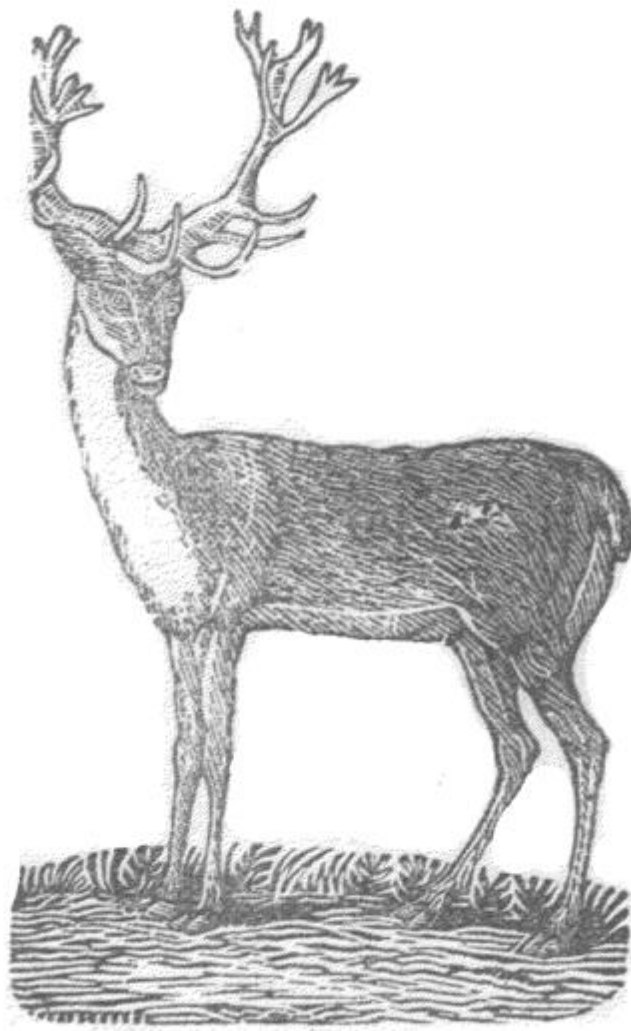


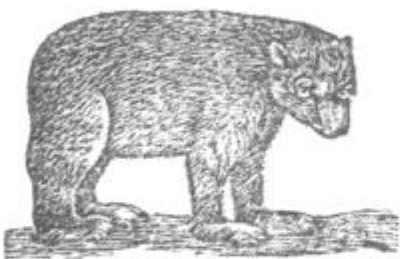
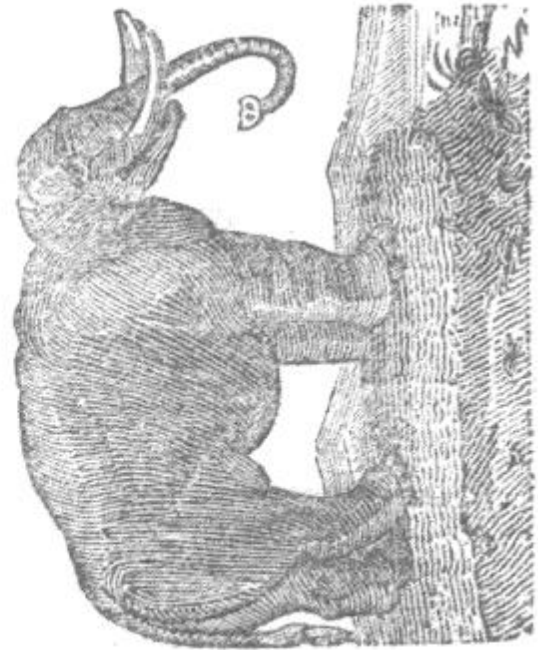
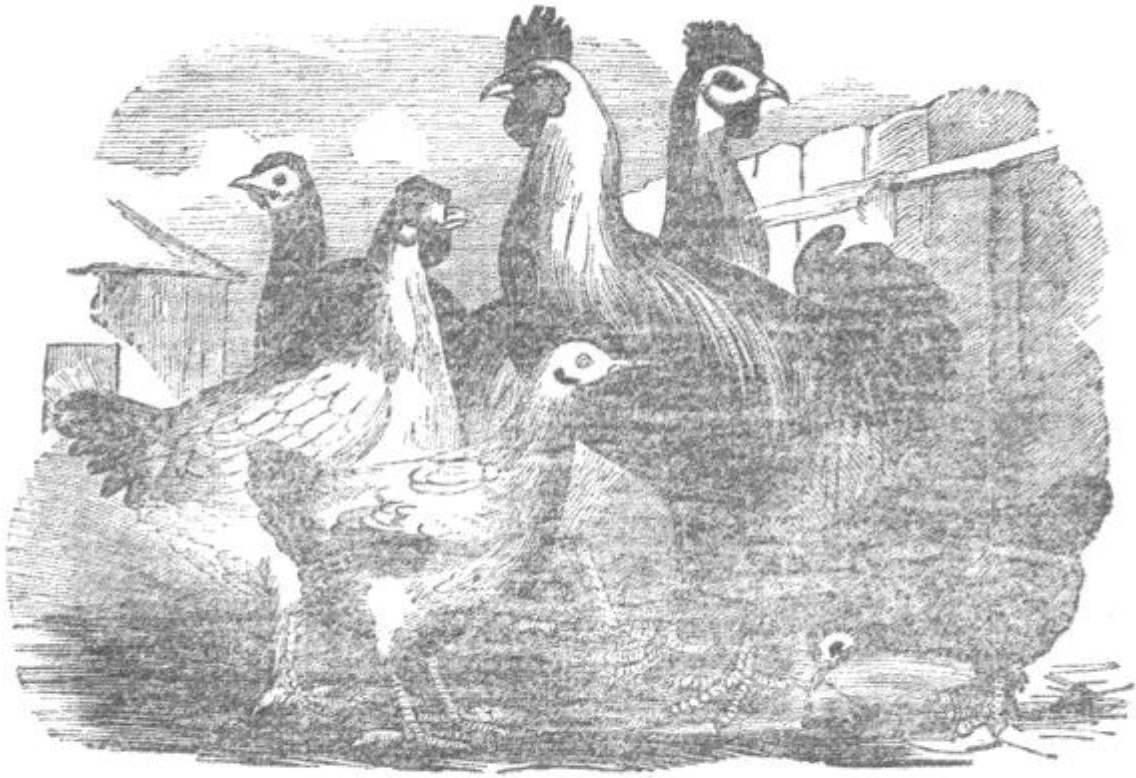
Berkshire.

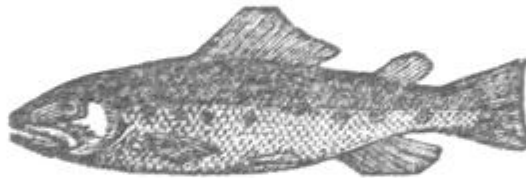
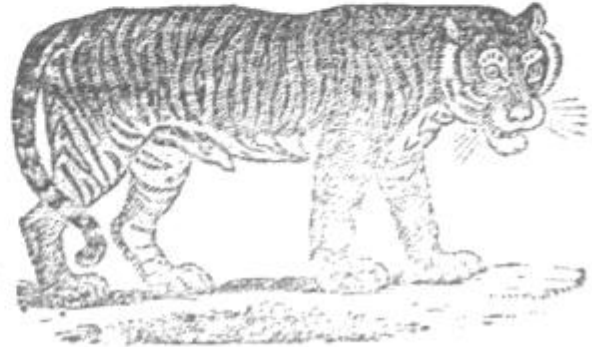
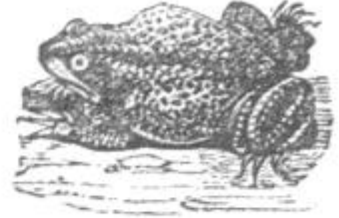
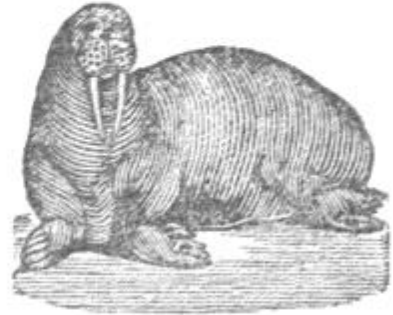
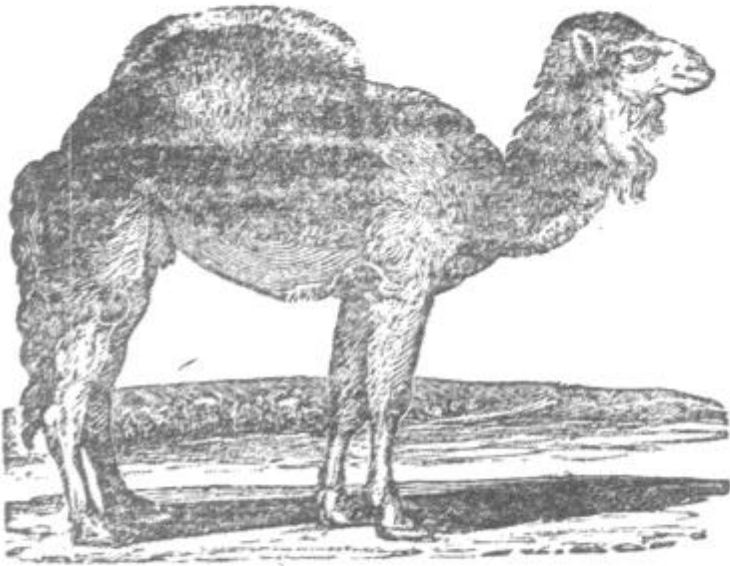


A Good Cross.





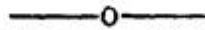






The Saddle.

The saddle has a piece tied on the front to prevent the horse from throwing the rider over his head. The sircingle should be double, and on lacing it, run it through the rings, so that you may have it tight to prevent him from rearing and falling backwards as some do. Bridle of bare snaffle-bit that will not hurt the mouth, but will keep him from jumping or running away. The reins for the bridle should be long and round. Take the rein of the right side over the top of the head and through the left check-ring, and the left rein over to the right check-ring; this is double leverage, and acts on the edges of the lips instead of the jaw-bones.



Facts concerning the Feathered Tribe.

You may control them for a short time by placing them on the ground on their back or face, and by drawing a mark from the bill with the finger or a piece of chalk, on the ground around them.

Protection against Snakes.

It is well known by many that a snake will not pass over a rope laid around your tent. If you make a mark in the dust around a snake, he will remain there for a day or more. A small woollen or cotton cord will protect you and your horse from him by placing it around the place you wish him to graze in for the night.

A LIST OF THE MEDICINES USED IN THE TREATMENT OF THE DISEASES OF ANIMALS.

In the present imperfect state of the knowledge of the diseases of cattle and their remedial treatment, it may be supposed that many gross errors are committed—many inert or injurious medicines administered—many complaints aggravated, and thousands of animals lost. The pharmacopœia of the cow-leech does not indeed contain a numerous list of drugs, but a considerable portion of them are either useless or dangerous, or administered in ineffectual or destructive doses. It is not, however, the object of the editor of this work to draw up a catalogue of errors and abuses in cattle-practice, although he might easily present one, ridiculous and disgusting to an almost inconceivable degree; but to describe the properties, and doses, and combinations of those medicines which the experience of rational practitioners in former times, and the inquiries of scientific men in these later years of veterinary improvement, have sanctioned.

Alcohol.—There are two circumstances which not only render the practice of giving stimulants to cattle far more excusable than in the horse, but absolutely necessary: the first is the disposition which all the inflammatory diseases of cattle have to take on a typhoid form, and assume a malignant character—and the second is, the construction of the stomachs of these animals, in consequence of which a considerable portion of the medicine falls into the comparatively insensible paunch. Hence, inflammation having been subdued, the practitioner is always anxious to support the strength of the constitution; and even while he is combating inflammation, he cautiously adds a stimulant to the purgative, in order that he may dispose the tissues with which that purgative may come into contact to be affected by it.

Aloes.—This is the best, and almost the only purgative on which dependence can be placed in the treatment of the horse; but it holds a secondary rank, or might be almost dismissed from the list of cattle-aperients. It is always uncertain in its effect, and sometimes appears to be absolutely inert.

Alteratives.—These are medicines that are supposed to have a slow yet beneficial effect in altering some diseased action of the vessels of the skin or of the organs of circulation or digestion. To a cow with yellows, or mange, or that cannot be made to acquire condition, or where the milk is diminishing, small quantities of medicine are often administered under the tempting, but deceptive, term of *alteratives*. They had much better be let alone in the majority of cases.

Alum.—This is a useful astringent in diarrhoea, and especially in the purging of calves. It is best administered in the form of alum whey, which is composed of two drachms of powdered alum, dissolved in a pint of hot milk; a drachm of ginger may be added; and, if the purging is violent, a scruple of opium.

Anodynes.—The only one used in cattle-practice is opium. The doses in which it may be employed have already been pointed out when treating of the diseases in which it is indicated.

Antimony.—There are but three preparations of it that can be useful to the practitioner on cattle. The first is

Emetic Tartar, which, in doses from half a drachm to a drachm, and combined with nitre and digitalis, has great efficacy in lowering the circulation of the blood in inflammation of the lungs and every catarrhal affection, and particularly in that species of pleurisy to which cattle are so subject. Emetic tartar, rubbed down with lard, constitutes a powerful and very useful stimulant when applied to the skin.

Antimonial Powder.—The powder of oxide of antimony with phosphate of lime. It is frequently sold in the shops under the name of James's Powder, and possesses all the properties of that more expensive drug. It is a useful febrifuge in cases where it may not be advisable to nauseate the beast to too great a degree.

Antispasmodics.—Opium, for its general power, and particularly for its efficacy in locked jaw, stands unrivalled. The spirits of turpentine and nitrous ether are useful in cases of colic.

Astringents.—These are few in number, but they are powerful: alum, catechu, opium (an astringent because it is an anodyne) and blue vitriol comprise the list; the first used both externally and internally; the two next internally; and the last internally, but chiefly powerful as arresting nasal discharge.

Calommo.—A very useful tonic, and especially in those

cases of debility which accompany or follow dysentery. It should be given in doses of from one to three drachms, combined with ginger.

Camphor.—Used externally alone in cattle-practice. It is a component part in the liniments for palsy and garget.

Chamomile.—If it were necessary to add another tonic to the gentian and calombo it would be the chamomile, and on the principle of not being so powerful as either of the others, and therefore used in somewhat doubtful cases, when, if the state of fever has not quite passed over a stronger stimulent might have been prejudicial.

Copper.—There are but two compounds of this metal that have any value in cattle-practice, and they are the BLUE VITRIOL, or sulphate of copper, and VERDIGRIS, or acetate of copper. The use of the first is limited to the coryza, or inflammation of and defluxion from the nose in cattle, accompanied by little or no cough or fever, and which is sometimes in a manner epidemic. The manner of administering it is described. As a caustic the blue vitriol is altogether superseded by those mentioned under that head.

Cordials.—These are destructively abused by many cow-leeches, but, as has been again and again stated, there is that in the structure and constitution of cattle, which will excuse their administration much oftener than in the horse. Except in extreme cases, and when their use is sanctioned by the decision of a competent veterinary practitioner, they should not extend beyond good home-brewed ale, and ginger and carraways; or, perhaps, because the farmer will seldom believe that a drink for a cow can be good for anything unless it stinks of aniseed, a few drops of the oil of those seeds may be allowed. The bay berries, and cardamom seeds, and coriander seeds, and cumin seeds, and diapente, and elecampane, and fennel seeds, and fenugreek seeds, and grains of paradise, and juniper berries, and horse-spice, and peper, and various other pungent aromatics that encumber the shelves and loads the drinks of him of the old school, should be banished from the pharmecopoeia of the rational practitioner of cattle-medicine.

Digitalis (Foxglove.)—The leaves of this plant, gathered about the flowering season, dried, kept in the dark, and powdered when wanted, are most valuable in diminishing the frequency of the pulse, and the general irritability of the system in cattle. A reference to the treatment of almost every febrile disease will illustrate this. The dose is from

half a drachm to a drachm, with emetic tartar, nitre and sulphur, and administered twice or thrice in the day, according to the urgency of the case. The practitioner must not be alarmed at the intermittent pulse which is produced. It is by means of certain pauses and intermissions in the action of the heart, that the rapidity of the circulation is diminished when this drug is exhibited. The intermittent pulse is that which the practitioner will be anxious to obtain, and which he will generally regard as the harbinger of returning health.

Diuretics.—These fortunately are not so much used in cattle practice as in that of the horse; they are, however, allowable and beneficial in swelled legs, foul in the foot, and all dropsical affections, while they advantageously alternate with other medicines in the treatment of mange, and all cutaneous affections, and in cases of mild or chronic fever. Nitre and liquid turpentine are the best diuretics; and almost the only ones on which independence can be placed. The doses have been already pointed out.

Ginger.—The very best aromatic in the list of cordials for cattle, and with the exception of carraways, superseding all the rest. The dose will vary from half a drachm to four drachms.

Ipecacuanha.—This drug is used in the compound ipecacuanha powder, which has been recommended by some practitioners in the treatment of dysentery. It is thus—‘Take ipecacuanha root powdered, and opium also in powder, of each a drachm, and sulphate of potash an ounce. Rub them together to a fine powder.’ The dose is from two to four drachms. This, however, is not an efficient medicine for this disease.

Lard.—This is the principal basis of all ointments.

Laudanum.—See *Opium*.

Lime. Carbonate of Lime, Chalk.—This is a useful ingredient in all the drinks given in diarrhoea or dysentery. In every stage of these diseases there is a tendency in the fourth stomach, and perhaps in the intestines, to generate a considerable quantity of acid, than which a greater source of irritation can scarcely be imagined. The chalk, or the alkali of the chalk, will unite with this acid, and neutralize it, and render it harmless. In the diarrhoea of the calf it is absolutely indispensable, for there the acid principle is frequently developed to a great degree. The dose will vary from a drachm to an ounce.

Linseed.—Nothing can compare with the linseed meal as

an emollient poultice—if the ulcer is foul, a little of the chloride of lime should be mixed with it. If the object of the poultice is to bring an ulcer into a proper state of suppuration, a little common turpentine may be added; but the cruelly-torturing caustics of the cow-leech and the farrier should never disgrace the regular practitioner.

An excellent mash in cases of catarrh or sore-throat, and as an emollient in any intestinal affection, is made by adding bran to an infusion of linseed.

Linseed Oil.—Lard oil I prefer to castor-oil as a purgative; it is much cheaper, and, it is equally safe. Where the case seems to indicate an oily purgative, and the first dose of lard oil fails, it may be followed up by smaller doses of linseed oil, until the desired effect is produced.

Mashes are very useful in cattle-practice, not so much to prepare for physic, or to get into condition, as to form a soothing and cooling substitute, when the case requires a temporary abstinence from dry and stimulating food. They may be composed, like those of the horse, of bran only, with hot or cold water; or of bran with a decoction of linseed. In cases of debility, steeped or ground oats may be mixed with the bran, or malt may be used as a substitute for the bran and oats.

Mint.—An infusion or decoction of this plant will be a useful vehicle in which other medicines may be administered for the cure of diarrhoea or colic.

Myrrh.—The tincture of myrrh is a useful application to wounds, and is also applied to the cankered mouth; but it contains nothing to render it preferable to the tincture of aloes in the former case, or a solution of alum in the latter.

Nitre—See *Potash*.

Nitrous Ether, Spirit of.—A favorite medicine with many practitioners in the advanced stages of fever. It is said to rouse, to a certain degree, the exhausted powers of the animal, while it rarely brings back the dangerous febrile action that was subsiding. It is not, however, a stimulant to which the author has often dared to have recourse, except in the advanced stages of epidemic catarrh, or the malignant epidemic. The dose should not exceed half an ounce.

Nux Vomica.—This is not introduced from any experience which the author has had of its efficacy, but from the favorable opinion which some continental veterinarians have expressed of it in the cure of palsy. The doses which they gave consisted of more than an ounce. The author has tried

the nux vomica, and its essential principle, the strychnine, as a cure for palsy in the dog, but never with success.

Opium.—As an anti-spasmodic, an allayer of irritation, opium stands unrivalled.

White Vitriol.—This is a useful tonic application to the eyes, when the inflammation has been subdued, and debility of the vessels alone remains. It is particularly useful after inflammation of the haw of the eye. Some administer it in red water, and others in dysentery, very improperly. As a general caustic it is superseded by many others.

A table of the weights and measures generally used in the compounding of medicines.

WEIGHT.

The Pound	contains	Twelve ounces.
Ounce	“	Eight drachms.
Drachm	“	Three scruples.
Scruple	“	Twenty grains.

MEASURE OF FLUIDS.

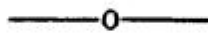
The Gallon	“	Eight pints.
Pint	“	Sixteen fluid ounces.
Fluid ounce	“	Eight fluid drachms.
Fluid drachm	“	Sixty minium or drops.

Tablespoonful will regulate the ounce.

Tabular view of the most common doses of the agents employed internally in the horse.

<i>Substances.</i>	<i>Doses.</i>	<i>Action.</i>
Aloes Barbadoes.	Six drachms.	Purgative.
Alum.	Three do.	Astringent.
Antimony.	Two do.	Sedative.
Arsenic.	One to ten grains.	Tonic.
Belladonna.	Two drachms.	Narcotic.
Camphor.	One do.	Sedative, anti-spas- [modic.
Cantharadies.	Three grains.	Tonic.
Carraway seed or oil	Six drachms.	Carminative.
Chalk.	One ounce.	Absorbent.

Copper acetata.	Two drachms.	Tonic.
Digitalis.	Thirty grains.	Sedative.
Gentian.	Three drachms.	Tonic.
Ginger.	Three do.	Cordial.
Iron, sulphate of	Four do.	Tonic.
Lime water.	Two ounces.	Gallon tonic.
Linseed oil.	Twelve do.	Cathartic.
Myrrh.	Two drachms.	Tonic & astringent.
Nilere.	Three do.	Diaretic.
Opium.	Two do.	Sedative and anti- [spasmodic.
Rosin.	Four do.	Diaretic.



INDEX.



A.

An inquiry concerning the soul of brutes	-	-	-	51
Admirers of science,	-	-	-	108
Adopting food to climate	-	-	-	163
Amount of food required by animals	-	-	-	170
Ages of horses	-	-	-	210
Application of natural laws	-	-	-	231
Animals, ten	-	-	-	225

B.

Benevolent horse	-	-	-	104
Benevolence of the Hog	-	-	-	105

C.

Cruelty to animals	-	-	-	47
Comparative physiognomy	-	-	-	63
Combe's Constitution	-	-	-	83
Cure glanders	-	-	-	171
Colic	-	-	-	196

Crossing of animals - - - - -	220
Circulation of blood - - - - -	228

D.

Dialogue between man and horse - - - - -	37
Defence of Neurology - - - - -	49
Dog attending Church - - - - -	104
Diseases or disorders - - - - -	160
Diseases of the horse - - - - -	176

E.

Exercise - - - - -	13
Essay on cattle - - - - -	244

F.

Flies and hot sun - - - - -	171
Feet diseases - - - - -	173

H.

Horse gig - - - - -	35
Health - - - - -	157
Hog, pork, corn - - - - -	281

I.

Intellectual laws of man and animals - - - - -	92
--	----

L.

Learned dogs, hogs, goats, and birds - - - - -	104
Language of the horse - - - - -	36

M.

Make a horse used to steam engines - - - - -	22
Make a horse stand where you leave him - - - - -	23
Moral laws - - - - -	95
Mortality - - - - -	97
List of Medicines - - - - -	300

N.

Natural laws of creation - - - - -	89
Nicking horses - - - - -	174

O.

On the mismanagement of farm horses - - - 121

P.

Principles - - - - - 19

Preface on teaching the horse - - - - - 10

Plans and receipts for training and teaching horses, cat-
tle, &c. - - - - - 30

Phrenology of animals - - - - - 69

Phrenology and physiology applicable to man and horse 104

Plow horses in the sun - - - - - 172

S.

Sympathy and sagacity of the cow - - - - - 105

Symptoms of diseases of the horse - - - - - 115

Sheep - - - - - 159

Stall to gentle the horse in - - - - - 13

T.

The theoretical education of the sporting dog - - - 54

The practical education of the sporting dog - - - 58

Teaching horses to perform twenty-four performances, -9-30

The manner of obtaining a good seat - - - - - 45

V.

Vegetative laws of creation - - - - - 90

W.

Work-horse - - - - - 15

Why is not man immortal and beast mortal - - - 100

Water-cure - - - - - 166

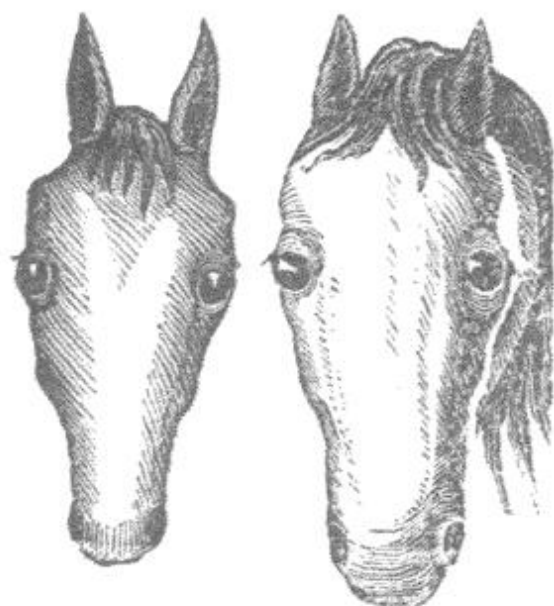
Wild horses, cattle, and hogs - - - - - 241

Wool growing - - - - - 279

This page in the original text is blank.

Perfect Head.

Imperfect Head.



Salt is one of the Universal Medicines.

A strong tonic, stimulates circulation and supports the pulse, relieves the lungs, coughs, and colds; aids breathing and acids of stomach that often causes scours. I end, by recommending it to you for coughs or colds, sore throats, and inflammation of the lungs, in man and beast. Relief will be given in a short time. Keep it before you for all your stock, but do not use that which is made by boiling—the bitter water is poison to them.

Sulphur in small quantities is a good medicine in salt; it relieves fevers, prevents ticks, lice, and worms.

Antimony is useful to relieve hogs of worms, and given to make them fatten; must be given spring and fall.

FOOD. All animals are better with a variety of grass in the field, and dry good straw, wheat or rye is good for them. So in winter give them a good variety of grain, corn, oats, barley, Rye, and roots, fodder, hay, clover, reed-top timothy, &c.,

TO SUBSCRIBERS

We, the undersigned, have each of us purchased of Mr. Denton Offutt, a copy of his book in relation to educated horses; laws of mind and physiology and diseases of animals, which he has disposed of to us on the express condition that all its contents are to be kept secret from all other persons with certain exceptions hereinafter mentioned, and under a specified penalty. In consideration whereof, we do, each of us, bind ourselves our heirs and representatives to pay to said Offutt, his heirs and representatives, the sum of fifty dollars in each instance, where we shall communicate instructions for curing, teaching or governing animals, or any of the instructions, to any person whatever, except it be to a son or daughter, residing in the paternal family. Or to a servant, to whom you may say—"he must not halloe or make a noise to excite them, but use a quiet tone of voice. Rub, and feed them from the hand, as you do the dog, and use but few and simple words. When you want the horse to stop, use no other word than "wo!"—don't say "ho!" except you want him to go slower. The more you talk kindly, the better. By this, and by rubbing them in the face, they will soon learn to follow, as a dog."

By the above, and the instructions for fixing the gear, you can accomplish much.

And we do moreover bind ourselves, that when we shall receive a copy of said Offutt's book, in each of which will be a printed copy of the foregoing agreement, we will, each of us, sign owner's name therefor in the copy we may receive, as evidence of our being severally bound thereby. We not only bind ourselves legally to pay respectively, said penalty for each violation hereof, but we bind our honor not to violate the above agreement.