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THE TENNESSEE FARMER'S

HORSE BOOK.

A TREATISE ON THE AMERICAN HORSE
AND HIS DISEASES.

THE RESULT OF NEARLY TWENTY YEARS' PRACTICE, AND ESPE-
CIALY ADAPTED TO THE USE OF THE FARMER. SETTING
FORTH ABOUT FORTY DISEASES: THEIR CAUSE
AND SYMPTOMS, TREATMENT AND CURE.

✓
By T. P. MOORE, V. S.

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PREFACE.

The author, in presenting "The Tennessee Farmer's Horse Book" to the public, believes he is supplying a long-felt want among the farmers of the country, and confidently believes that he is conferring a blessing upon his fellow man that will outlive himself. His reason for thus believing is that he has for more than twenty years tested the merits of the remedies recommended in this work. It is the result of a long practice in the States of Alabama and Tennessee.

The author does not claim perfection in this work, nor does he claim to be a graduate from some veterinary school; but having procured the best books that could be obtained, and studied them carefully, receiving such benefits by following their teaching, first with his own horses and mules, and then with those of his neighbors, he now sends the work out upon its own merits. It is written in plain, simple language that the common people will readily understand. But few persons are found capable of properly treating the diseases of the horse. Not a few have professed to know all about the horse and his diseases whose ignorance and presumption have generally disgusted the horse owners. Medicines are too often given to destroy the effects of the disease rather than to remove the cause of it. The farmer must necessarily be his own horse doctor, or be without one; hence the importance that all horsemen acquaint themselves not only with the ordinary diseases of the horse, but also with the medicines which will cure them. The farmer is not familiar with many of the preparations recommended by some authors. This should not be so. The remedies recommended in this work are few, simple, and easily procured.

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A Brief History of the Horse.

The horse is a native of several districts of Asia and Africa; and in the southern parts of Siberia large herds of these animals are occasionally seen. They are extremely swift, active, and vigilant, and have always a sentinel, who, by a loud neigh, gives notice to the herd of the approach of danger, on which they gallop off with astonishing rapidity.

The horse, in an unimproved state, is found in almost every part of the globe, except, perhaps, in the Arctic circle. As a domestic his docility and gentleness is unparalleled, and he contributes more to the convenience and pride of man than all other animals put together.

In Arabia the horse is found in their highest perfection, as little degenerated in their race as the lion or tiger. To the Arabs they are as dear as their own children, and the constant intercourse, arising from living in the same tent with his owner and family, creates a familiarity that could not otherwise

be effected, and a tractability that arises only from the kindest usage. They are the fleetest animals of the desert, and are so well trained as to stop in their most rapid course by the slightest check of the rider. Unaccustomed to the spur, the least touch with the foot sets them again in motion, and so obedient are they to their rider's will as to be directed in their course merely by the motion of a switch. The Arabs never beat or correct their horses, but always treat them with the utmost kindness.

The description of the Eastern horses in the Book of Job is exceedingly poetical and expressive: "Hast thou given the horse strength? Hast thou clothed 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 rattleth against him, the glittering spear, and the shield. He swalloweth the ground with fierceness and rage; neither believeth he 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 captains, and the shouting."

In Norway, where most of the roads are impassable for carriages, the horses are remarkably sure footed. They skip along over the stones, and are always full of spirit. Pontopiddan says when they go up and down a steep cliff, on stones like steps, they first gently tread with one foot to try if the stone be firm, and in this way must be left entirely to their own management, or the best rider in the world would run the risk of breaking his neck. They exhibit much courage when they contend, as they are often under the necessity of doing, with wolves and bears, but particularly with the latter. When the horse perceives any of these animals near him he attacks them with his forelegs, which he uses so expertly as generally to prove victorious. Sometimes, however, the bear gets the advantage, particularly if the horse makes any attempt by turning his heels, for the bear then instantly closes upon him, and keeps such firm hold as scarcely to be shaken off. The horse in this case gallops away with his enemy, until he falls and expires from loss of blood.

There are a few countries that can boast a breed of horses so excellent as our own. The English hunters, however, are allowed to be among the noblest, most elegant, and useful animals in the world. While the French and many other European nations seem attentive only to spirit and parade, we train ours for strength and dispatch. With unwearied attention, however, to the breed, and repeated trials of all the best horses in the world, ours are now becoming capable of performing what no others can, especially where they have been judiciously bred and trained. Among racers the English had one (Childers) which has been known to pass over eighty-two and a half feet in a second of time—a degree of fleetness, perhaps, unequaled by any other horse. In the year 1745 the postmaster at Stretton rode on different horses on the road to and from London, no less than two hundred and fifteen miles, in eleven hours and a half—a rate of more than eighteen miles an hour; and in July, 1788, a horse belonging to a gentleman of Bilter Square, London, was trotted for a wager, thirty miles in an hour and twenty-five minutes—a rate of more than twenty-one

miles in an hour. In London there have been instances of a single horse, drawing for a short distance, the weight of three tons, and some of the pack-horses of the North usually carry burdens that weigh more than four hundred pounds. But the most remarkable proof of the strength of the British horse, is in their mill horses, some of which have been known to carry at one load thirteen measures of corn, that in the whole would aggregate more than nine hundred pounds in weight. Though endowed with vast strength and with great power of body, such is the disposition of the horse that he rarely exerts either against his master. On the contrary, he will endure fatigue even to death for our benefit. Providence seems to have implanted in him a kind disposition and fear of the human race, with, at the same time, a consciousness of the service he can render to man.

We will here give one instance of his recollection of injury and his attempt to avenge it: A baronet owned a horse which had never tired in the longest chase, and he once thought he would try to completely fatigue him. After a long chase therefore he dined, and again

mounting, rode him furiously among the hills. When brought to the stable the animal appeared exhausted, and was scarcely able to walk. The groom, possessing more feeling than his brutal master, could not refrain from tears at the sight of so noble an animal thus sunk down. The baronet some time afterward entered the stable, and the horse made a furious spring upon him, and, had not the groom interfered, would soon have put it out of his power of ever again misusing animals.

Diseases of the Horse.

SWEENY OF THE SHOULDER.

This disease is of common occurrence, no age or condition of the horse or mule being exempt. Its cause may be traced to some severe strain at the top of the shoulder, severing the scapula, or shoulder-blade, from its position at the top of the shoulder, where it is joined to the withers by a strong ligament. When this occurs the shoulder-blade drops down, giving the shoulder a hollow, shrunken appearance.

Symptoms.—As above stated, the shoulder will shrink away; the skin will, after a time, adhere closely to the bone, caused by high, local fever. The horse will step short and limp on the side affected; or, if both shoulders are diseased, he will be lame in both alike. When this is the case the animal travels with more ease up hill than down hill. There is a direct sympathy between the shoulders and

the feet, consequently the animal will soon become diseased in the latter if the former is long neglected. Hence, the necessity of at once attacking the disease.

The following symptoms are generally overlooked, but none are more clear to the experienced practitioner: The sweenied horse is unwilling to lie down, especially if both shoulders are diseased, but when completely worn out standing on his feet, he will come down suddenly to the ground. These symptoms clearly distinguish the sweenied horse from the foundered horse: The horse with the sweeny wears himself out *standing on his feet*, while the foundered horse wears himself out *lying down*. The cause of the latter lying upon his side so much is to relieve his tender and fevered feet of the pain it gives him to stand upon them. Another clear symptom, characteristic in the horse suffering with sweeny, is the shrinking or falling away of the muscles of the arm, which will finally disappear if the disease is allowed to run its course.

Treatment. —The first thing to be done is to bring to the surface the inflammation and soreness already established in the shoulders. This

can readily be done if the following directions are faithfully carried out. Apply the Penetrating Liniment* once each day until four applications are made; then omit the use of the Liniment for four days, and then apply it again. Bathe in the Liniment with hot iron held near, but not touching the skin. Keep this treatment up until the patient quits limping, which will be from five to fifteen days. Apply the medicine to the affected part by means of a little mop or rag tied on the end of a stick. Thoroughly wet the hair over the diseased parts, but should not be used so freely as to run down on the sound parts. Every other day the feet should be cleaned out, and if there should be any rotten or chalky appearance found there, dig this out and then wet the bottoms of the same with the Liniment, drying it in with hot iron. The skin of the shoulder should be rubbed with the hand and loosened daily during treatment.

Grease should always follow the use of the Penetrating Liniment, as it will prevent a removal of the hair and the scarf skin, but never the true skin if followed with plenty of grease.

* See formula in another place.

The hair will grow out again and will have its original color, without any disfiguration of any kind. If the fever is high, or the condition of the patient is bad, bleed at the commencement of the treatment, from the jugular, or neck vein, taking three quarts of blood. This will reduce the fever, and will hasten a cure.

Some modern horse doctors have condemned bleeding as barbarous, and altogether unnecessary. However, experience is a correct teacher, and one easily understood. Some of these so-called horse doctors who object to bleeding, will inflate the skin of the shoulder with air, and will recommend the use of polk-root and arsenic being inserted into the diseased parts, for sweeny, fistula, and poll-evil, and will also cut out the haw, or hook, from the eye to cure the inflammation commonly called hooks, as though the wise Creator had failed in his work, and that man could better it. But we will dismiss the subject for the present by saying that the author has been bleeding horses regularly for a period of twenty years, and has never seen any of the bad effects ascribed to bleeding, but has seen

his patients grow stronger from the commencement.

BIG SHOULDER.

This formidable disease is nearly always the result, or outgrowth, of a long-neglected case of sweeny, or the final development of big head and big jaw, and is never permanently cured, but can be patched up. The fever and soreness can be cured, and the animal returned to the duty of the draught horse, but is wholly unreliable under the saddle; his shoulder will always remain out of shape.

Symptoms.—The top of the shoulders perish away; the shoulders near the lower ends grow larger, and, from sheer weakness, pitch forward. The sternum, or breast bone, that keeps the points of the shoulders in position when the animal is in health, no longer serves that purpose. The patient can no longer keep his fore feet apart, but will cross them while standing. When the disease has reached this stage, no treatment will do him any good.

Treatment.—The treatment is essentially the same as that just laid down for sweeny of the shoulder.

SWEENY OF THE HIP.

The author acknowledges to have had but little personal knowledge of this disease, but in almost every instance, when called upon to treat horses said to be afflicted with this disease, has found the trouble to be in the stifle-joint. The high, local fever and soreness of this joint causes the hip to shrink. For this reason, persons are led to the conclusion that it is hip-sweeny.

Treatment.—Treat as for stifle.

SLIPPED, OR BROKEN HIP.

For these injuries of the horse we know of no permanent cure; the unfortunate owner can do no better than accept the situation, for no veterinary surgeon can reset the dislocated or broken parts, and cause them to remain in position. A few weeks' rest, with an occasional application of the Penetrating Liment to the affected part, is all that can be done. This injury seldom materially injures the horse, though his hip is disfigured for life.

STIFLE.

Stifle-joint lameness is always brought on by the horse getting his foot confined in some

false position which wrenches the stifle-joint. Such trouble may arise from a lick or blow at this joint. To say that the stifle-joint was never dislocated would be to differ from many persons whom the author has met in his practice. Nevertheless, it is true, the patella, or knee-cap, covering this bone (answering to the knee-cap in man), is sometimes displaced, but the joint is never dislocated. Persons who hold to the idea that the joint is dislocated, when called on for their own experience have had to acknowledge that their opinion was founded upon what they had heard from others, who, doubtless, had had no experience of their own.

Symptoms.—The stifled horse is always very lame—so much so as to almost refuse to put his foot to the ground on the affected side. The animal will limp much worse while traveling up hill than down or on level ground. He will rest the foot by placing the toe on the ground, and if exercised severely, there will be frequent twitchings of the muscles at the stifle-joint. The muscles of the hip will shrink away, caused from the local fever in the stifle-joint, which leads to the conclusion

that the animal is afflicted with hip sweeny. Cure the stifle when the above symptoms are present; the muscles of the hip will fill out, when the patient can return to duty again.

Treatment.—Make one application to the stifle-joint with the Penetrating Liniment every second day until three applications are made, then discontinue treatment for four days; then apply Liniment again as before, and continue the treatment as above until the patient quits limping. If an old, standing case the treatment will require several days, and perhaps weeks, to effect a permanent cure; but if above treatment is faithfully carried out, the animal will be restored to health. The cruel practice recommended by some, of tying a rope to the horse's foot and confining the other end to a tree or post, and then forcing him by the whip to run the length of the rope for the purpose of pulling the joint into place; or by putting on a stifle-shoe, as is frequently practiced; or cording the opposite leg to force the suffering animal to throw his weight on the injured member, are all unnecessary. If the patella, already referred to, should be out of place, follow the directions above given, and

when the inflammation is reduced, the swollen joint will also be reduced. The patella will resume its place again, and nature will do the rest, if the horse is allowed unbroken rest. But if forced to hard labor, the owner will soon find the disease permanently established, which will defy the skill of the best practitioner for all time to come.

The author can not leave this chapter, or subject, without warning horsemen of the frequent abuse that is practiced so often in driving our faithful servant, the horse, while suffering from disease of any kind. It is foolishness, to say the least of it, that a horse, suffering from disease of any kind, is better off by being worked. If such unfeeling horsemen were placed in the situation of their suffering horse, they would soon learn to have that mercy the divine law requires.

BONE SPAVIN.

Bone spavin first makes its appearance on the inside of the hind leg, a short distance below the hock joint, and is considered by many incurable, which conclusion is correct, if allowed to run its course without treat-

ment. But as long as the enlargement is below the hock joint, and is confined to the splint, or inner shank bone, it is curable, but when the entire hock joint is involved and swollen, then it is labor and medicine thrown away to further treat the case.

Cause.—The cause of this sad affliction is a severe strain from hard work or riding, and not unfrequently from a blow or lick, which starts the extra growth at the head of the bone, which is very soft at that point. High fever sets in at once; the entire hock joint suffers, and sometimes swells inordinately. Sometimes the horse will be very lame before the lump is visible, which will frequently puzzle the practitioner no little to diagnose the disease. One plain feature in the spavined horse is whether the enlargement visible to the eye is cause of his lameness in starting off after rest. But after a time, when he is warmed up by exercise, he will travel as smoothly as if nothing ailed him.

Treatment.—By no means allow the knot removed by chipping off with chisel or other instrument, as is frequently done. Such treatment will do no good, but will only in-

crease the soreness and inflammation, and will hasten a fatal termination, or establish an incurable case. Better do nothing at all than to make such a mistake. The author can not condemn with too strong language the burning with hot iron, as is frequently the case, as it always increases the inflammation and makes the case worse.

Apply to the affected part the Penetrating Liniment every day for six days; bathe in with a hot iron. Omit treatment for four days, then resume again. If this treatment should fail to effect a cure within fifteen or twenty days, the Iodide of Mercury Ointment should be substituted. This should be applied every eighth day to the diseased parts; rub it well into the hair. As soon as a blister is raised, or the parts become sore, dress or anoint with lard. The practitioner must be patient and persevering. These bony enlargements are obstinate to remove, and are slow to yield to treatment of any kind.

SPLINT.

This disease is similar to bone spavin, both being an extra growth of bone, but differing

in location and severity. Splint yields readily to treatment, while spavin, as already stated, is obstinate. Splint generally makes its appearance on the inside of the fore leg; it is seldom found on the hind leg, and is generally so remote from the joint that it is seldom involved. Splint is caused by a blow or lick; sometimes by being struck with the calk of the shoe on the opposite foot.

Treatment.—A few applications of Penetrating Liniment will remove the soreness and drive away the inflammation within a few days. If the joint is not involved, further treatment is unnecessary. The lumps on the leg will soon disappear. But if the joint should become involved and the horse is lame, treat as for spavin. Splint knots, unless very near the joint, or some strong ligament, will usually pass away of themselves between the age of eight and twelve years.

ENLARGED HOCK.

This unsightly and sometimes obstinate disease is caused by the horse kicking against the stall or some other hard-like substance, or by excessive pulling, which would be likely to

be followed by inflammation and lameness, which may continue but a short time. In this stage of the disease a free use of warm salt water as a bath and a few days' rest may suffice for treatment, but if enlargement continues, and lameness should not pass away within three or four days under the above-named treatment, the Penetrating Liniment should be used precisely in the same manner as directed for bone spavin. The hot iron may be dispensed with, unless the enlargement becomes hard or bony.

RING-BONE.

Ring-bone is a disease of the foot, caused by a severe strain or bruise, and first makes its appearance just above the hoof, at the point where the hair and hoof meet. It often causes great lameness before the disease can be detected by the eye. After a time it shows itself at the point designated, frequently making such headway that it completely encircles the foot within a very short time, spreads the top of the foot out of its natural shape, and finally ends in club foot, which no remedy will permanently cure. When the disease first

makes its appearance at the top of the hoof, then is the golden opportunity to attack the disease, which should be done by applying the Penetrating Liniment daily for six days; then omit treatment for four days, then resume treatment as before. Keep this treatment up until the extra growth is checked and the patient travels better; then change the treatment from daily application to every second day, until three applications are made; then omit treatment for six days, then resume again. The length of time to effect a cure will vary in different cases. Generally four weeks will fully test this treatment. However, the practitioner will find in many cases decided improvement within fifteen or twenty days. If the above-named treatment should fail, the Iodide of Mercury Ointment should be used as directed for bone spavin. Another treatment comes to me from high authority that I have confidence in, it having been tried successfully in this community, which is as follows: Puncture the enlargement with an awl, or some other sharp instrument, in a number of places; then apply Tincture of Iodine with small mop twice per day until there is consid-

erable soreness; then stop the treatment until the soreness gives way, then resume treatment as before, and continue as above until the disease is removed.

BIG HEAD AND BIG JAW.

This disease is claimed to be exclusively American, and is far more common in the Southern than in the Northern States, and is much oftener met with in that portion of country where the water is destitute of lime, though occasionally met with throughout the country. Old horses are more subject to the disease than the young, though no age or condition are wholly exempt from this disease.

Cause.—For want of lime in the water during colthood while the bones are developing we believe to be the first cause, or foundation laid for the future development of big head and big jaw. While this disease first makes its appearance in the bones of the head and jaw, we should not be led to the conclusion that the disease is confined there, for the experienced practitioner knows that the animal troubled with this disease will soon break down all over. He will break down first in

one leg, then in another, and finally gets stiff all over. His skin will adhere to the bone, as in hide-bound, which proves conclusively that instead of the disease being local and confined to the head and jaw it is general.

Another cause, and perhaps the greatest of all, is the abuse of the animal after he is put to service. His energies are apt to be overtaxed by hard work, his feed too often is dry corn and fodder, which are heating in their tendencies, and will greatly hasten development of the disease. Horses allowed to run on a good pasture are seldom afflicted with this disease.

Symptoms.—The disease first makes its appearance on the frontal bone of the face, and also the under jaw. It can be readily detected in its first stage. Run the thumb up in the corner of the mouth to the roots of the under jaw teeth, and if there is any enlargement, or swelling, of the under jaw-bone at that point, better commence treatment at once for big head. The teeth are on a perpendicular line with the under jaw-bone of the sound horse. The skin and muscles of the head and face become fixed so that they

will not move when the lips are pulled. After a time the horse will become lame in one leg and then in the other, and later will become diseased all over, and so stiff that he can not get up when he lies down. This disease breaks down the entire frame-work to such a degree that long before the animal becomes prostrated, he can not rise at will. He will rise to his feet by first getting on his hind feet and come up then with his fore parts, which is the reverse to the natural way of rising to his feet. His excrements will be hard, black, and dry, and voided with difficulty. The skin will adhere closely to the ribs; the hair will look dry and bristling; the appetite will remain good; he will relish dry corn more than in health, sometimes refusing all other feed. The very thing that has contributed largely in the development of his disease is the only thing now that he is most anxious to eat.

Treatment.—Bleeding is indispensable; take three quarts or one gallon of blood from the neck vein at commencement of treatment, and ten days later repeat the bleeding, taking about three quarts of blood. Then apply the

Penetrating Liniment every other day until six or eight applications have been made to the enlargement on the frontal bone of the face and under jaw. Thoroughly wet the hair with the Liniment, after which dry it in with a hot iron held near, but not touching the skin. Omit treatment for five days, then resume again. Keep up this course of treatment as long as necessary, which will be from three to six weeks. Better continue treatment longer than might be necessary rather than stop too soon, as a relapse would prove worse than the first attack. In connection with the above treatment give Renovating Powders, one table-spoonful, or more, each day until all symptoms of lameness and stiffness have passed away, and the skin is loosened and the hair takes on that appearance it should have in health. The bowels should be kept in a healthy condition by the free use of the Renovating Powders for at least two months, for the purpose of eradicating the disease entirely from the system. The practitioner will know more about the success he is having in the treatment of the case from the state of the bowels than from any other means. After

the constipated state of the bowels has been removed, and the excrement changed to a soft and a healthy, yellow appearance, the practitioner may consider his patient doing well, and all that is necessary is to continue the use of the remedies above named.

Examine the bottoms of the feet, for by this time the raging fever may have rotted the feet. If so, they will have a rotten, chalky appearance, which should all be removed with chisel, or other like instrument, until the sound part is reached; then thoroughly wet them with the Penetrating Liniment, drying it in with hot iron. This treatment should be kept up twice per week until the feet become sound.

By no means should the animal be worked during treatment nor while convalescent, as a hard drive or other exercise will be liable to bring a relapse, which condition will be worse than the first. The patient should be well housed from inclement weather, but during fair weather give him the run of a good pasture. Exclude all heating or stimulating food, such as dry corn and fodder. If the above treatment is faithfully carried out, it will per-

manently cure every case of this disease, but if neglected too long, until the shoulders become enlarged at the humerous joint, or point of the shoulder, and shrunk at the top, as in big shoulder, this disfiguration is never removed, though the disease is entirely eradicated from the system.

DISEASES OF THE EYE.

When a horse's eyes become diseased it is generally considered that it is all over with him; he will go blind. We will first examine into the cause of so many horses going blind. Ill usage and bad stable management in many instances; both are prolific in generating disease, and work fearful consequences to eyesight; but, perhaps, a still more serious evil is the deficiency of light, which is essential to the eye. It is not strange, therefore, that the eye suffers when deprived of the light, which is its natural element. Chronic diseases, especially founder and distemper, help to aggravate any unfavorable condition of the eye. But few horses would have diseased eyes if kept in the open air and fed on proper diet. The wonder is that so few

horses go blind, which are kept on dry and heating feed.

INFLAMMATION OF THE EYE, OR HOOKS.

Many persons doubt the existence of hooks. No hooks nor any thing else grow in the horse's eyes that do not belong there. The washer, as it is commonly called, is a little triangular-shaped cartilage within the inner corner of the eye, a small portion only visible. The washer, or haw, serves the valuable purpose to throw off any foreign substance that might find its way into the eye, as dust, flies, or gnats. Inflammation of the haw generally proceeds from fever, accompanied by swelling of the haw to such a degree that it sometimes protrudes from its place under the lids, much to the annoyance of the horse. A barbarous and useless practice is in vogue of cutting away these lumps from the eye with a knife. After such treatment the eyes frequently go out, and if this does not occur, the horse suffers therefrom the remainder of his life. The eyeball is ever afterward exposed to the dust and whatever may lodge on it, with no means of throwing it off.

Treatment.—When it is ascertained that the horse is troubled with hooks, whether it be called “fatty hooks” or “bony hooks,” the eye-wash recommended in this work is all that will be needed to put in the eye. Bleed at commencement of treatment, taking three quarts of blood, and ten days later, if the eyes are not improved, bleed again, taking two quarts of blood. If the haw is projected from its place, put a twitch on the horse’s nose, and while he is being held by an assistant, scarify the haw with a sharp knife, or lance, until it bleeds, and apply freely the eye-wash morning, noon, and night. The hooks will soon disappear, and the horse will be as sound as ever. Under no consideration allow the knife used to cut out the hooks.

HOOF ROT.

As the name implies, this is a diseased state of the bottoms of the feet.

Cause — Sometimes hoof rot is the fruit of bad shoeing; sometimes by letting the shoe remain on his feet too long; sometimes by sweeny or spavin, or other febrile complaint of long standing; or from suffering the animal

to stand through the long winter months in a stable on a bed of damp and decaying manure. If the horseman would have his horse's feet always sound never suffer him to stand on any other floor than the cool, dry ground.

Symptoms.—The animal walks as though he was sweenied—steps short and limps, and while standing is continually putting forward the diseased foot, or feet, to relieve them of the burden and pain it gives him to stand on them. The feet have a dry, puniced, or chalky appearance, which is easily dug out with knife or chisel, and will have a very offensive smell. Sometimes the ankles are swollen after standing for some time.

Treatment.—Thoroughly clean out the bottoms of the feet of all rotten and decayed matter, and use the Penetrating Liniment on the feet as directed in disease of big head and big jaw.

NAVICULAR DISEASE.

This is a disease of the feet, and has given the practitioner much trouble by reason of its symptoms, resembling symptoms of other foot diseases. Usually it is slow in its external

developments, by reason of its being so deep seated. For a while the animal is lame; after a time the lameness passes off, but in a few days returns again. In the meantime, the disease is establishing itself in the horse's feet.

Causes.—The navicular joint is liable to injuries from traveling over rough roads, or on frozen ground, often bruising the frog of the foot, from which fever and inflammation arises, causing great lameness. Sometimes an abscess is formed and will break and run for weeks, and sometimes for months. When this occurs there is a hope of the animal recovering, though this will be slow, and the anxious owner must patiently wait. Frequently this disease takes an entirely different turn. The navicular bone becomes diseased; the frog becomes diminished in size, and the back part of the foot begins to contract, or close, by coming together. Then we have what is familiarly known as narrow heel. Finally it runs into club foot, which is incurable.

Treatment.—No treatment will be of any value unless an outward development of the disease is brought about. This can sometimes be

done, and often it can not. Apply the Penetrating Liniment to the heel and back part of the foot; also to the bottom and frog of the foot. Make the application of the Liniment every other day—bathing in with a hot iron—until the horse is well. This treatment is intended to bring the matter to the surface. When this is done, and it breaks and begins to run, your horse is safe; the cure is only a question of time. If the horse is in bad condition, bleed him at the commencement of the treatment, and give one table-spoonful of the Renovating Powder every second day until half a pound has been given.

Give the horse comfortable quarters during cold weather and chilling rains, and keep him on a dry floor for six or eight hours after the Liniment has been applied, as mud and water will destroy the effects of the Liniment.

FOUNDER.

The first cause of founder is the diseased condition of the feet, which is aggravated by eating and drinking excessively. In an experience of twenty years the author has not met with a case of founder without diseased

feet. If the feet were not diseased the horse might be very sick from overeating or drinking, as is often the case. But when relieved of this trouble he will not be lame.

Symptoms.—The horse becomes restless, shifts his fore feet, steps short, and limps as in sweeny, but one mark or symptom always pointing out founder from that of sweeny is the foundered horse spends almost all his time lying down, which gives relief to his tender feet, while the sweenied horse spends most of his time standing on his feet, as it gives him pain in the effort to lie down. The foundered horse is very lame, especially in his fore feet, and not unfrequently in the hind feet. His back is roached up, the hind and fore feet are almost drawn together; he will not move unless forced to do so. When lying down he repeatedly grunts, and places his nose on his feet, thus pointing out the locality of his suffering. His pulse is very high, running up to 75 or 80.

Treatment.—As the fever has by this time dried up the blood, and caused it to be thick and sluggish, it is essentially necessary to bleed freely from the neck vein. This is the

best remedy to at once reduce the fever and relieve the inflammation. Give the patient fifteen drops of Tincture of Aconite every four hours until three doses are given. Bathe the feet and legs with strong salt water as hot as the horse can bear it; do this every two hours for the first twenty-four hours. In addition to the bathing, give the horse a drench of one quart of warm salt water at commencement of treatment; also examine the bottom of his feet, and give them the treatment given under hoof rot. Take a sharp knife and split the little knots found in the fetlocks, or back part of the ankle, both on the hind and fore legs; let them bleed freely; this will give almost instant relief. Also wet the hair with the Penetrating Liniment at the point where the hoof and hair meet once each day for three days. But the treatment for the bottom of the feet must be continued until cured. If the above treatment is energetically and faithfully carried out, the horse will recover in three or four days, and can be returned to moderate labor not a whit worse than before.

Some of the bad effects will follow in the

wake of the disease, so commonly found where founder was allowed to run its course.

CONTRACTION OF THE HOOF, OR NARROW HEEL.

It is a common opinion among horsemen that contraction of the hoof is the result of bad shoeing; this we think is a mistake. If it were so, the trouble would occur oftener than it does, for the horse that is kept constantly shod seldom suffers with narrow heel. This is not properly a disease, but is the result of a diseased state of the feet. So long as the frog and other parts of the bottom of the feet are in a healthy condition, the horny, or outside, part of the foot will remain in position; but when the other parts of the foot become diseased, the frog will also become diseased and shrink away, allowing the outside parts at the heel to come together. The author has no confidence in any manner of shoeing recommended as a cure for narrow heel. Cure the disease that caused it, and narrow heel will pass away.

INJURIES TO THE FROG, OR STONE-BRUISE.

The frog is the central portion of the foot, located at the back of the foot, making a part of the heel. It is spongy and elastic, susceptible to injuries from many causes. It is often injured by traveling over stony roads and frozen ground and pierced with nails. When this occurs, fever and soreness arises, terminating very often in deep-seated and obstinate ulcers. Pare off with a sharp knife the outside of the frog. If any dark spots or bruises are visible, apply the Penetrating Liniment thereto once each day for three or four days; and if nothing worse than a bruise on the frog your horse will be well in a few days.

CORNS.

The author claims that during his practice he has never found, among the diseases of horses' feet, any thing he could rightly term corns, but when called upon to treat such, the so-called corns were the fruits of bad shoeing or from suffering the shoe to remain on too long, or from some other abuse or neglect, out of which many of the diseases of the feet are

brought about, as hoof rot, narrow heel, ring-bone, navicular disease, etc.

Treatment.—The horse's feet should be examined by removing the shoe and paring down the outside of the hoof—cleaning out the sole, as directed in hoof rot. If there should be any appearance of blood-shot, or tenderness, which is usually found when the trouble is pronounced corns, a few applications of the Penetrating Liniment, drying in with a hot iron, will usually set matters right, but if the trouble results from some other disease of the feet, treat the patient for such disease, found in this work under its proper name.

GLANDERS,

The attention of the horseman is now called to one of the most troublesome diseases found in our country, and by some practitioners considered incurable. This is true when the disease is so far advanced that cancerous ulcers are formed in the nose of the horse to any great extent, especially if very high up in the nostril. Until this stage of the disease is reached, the horse can be successfully treated and permanently cured.

Cause.—This is a contagious disease, differing somewhat from distemper. While distemper is contracted at a great distance, glanders is never communicated except by coming in contact with the virus, or discharge from the nose. This is done by horses being fed in the same box, or by grazing on the same ground, wearing the same harness, being confined in the same stall, or confined to the same hitching rack, for whenever the glandered horse is permitted to stand any length of time he will leave some of the poison virus, which, coming in contact with the nose of the sound horse, will readily communicate the disease.

Symptoms.—These are very obscure. In the first stage of the disease the horse will discharge from his left nostril a thin and almost clear matter, and as the disease advances the discharge will become thick and of a waxy consistency, changing to a darker color, and when advanced to the last stage will be mixed with blood from the cancerous ulcers found in the nose. He will soon lose flesh, his hair will lose its glossy appearance, the hide will adhere closely to the ribs, the patient will be

easily fatigued, his breathing will be hard, and he will be continually snorting to free his nostrils of the accumulating virus. The reason why the discharge from the nose is, in almost every case, at the commencement of the disease confined to the left nostril has never been satisfactorily explained; nevertheless it is true whenever the pus, or virus, is communicated to the glands of the throat and jaw they become inflamed and enlarged on the side from which the nostril is discharging. If the discharge is from both nostrils the glands on both sides of the jaw will be affected alike. These affected glands will adhere closely to the jaw on the affected side. The membrane of the nose will have a dark, leaden color, sometimes changing to a red color, caused by the inflammation; finally its color will be of a purple tinge. Small ulcers, having a circular form, will begin to make their appearance on the membrane of the nose; their outer edge will be prominent.

After the disease has advanced thus far the constitution of the horse has become much impaired. His hair, as already spoken of, is not only dead and bristly, but actually falling off.

His appetite fails, his cough increases, the discharge from his nose augments and becomes very offensive to smell, the ulcers will increase both in size and number, and his breathing can now be heard a considerable distance. The horse coughs but little in the first stage of the glanders, but increases as the disease advances.

Treatment.—The first thing is to bleed—take one gallon of blood; follow this by a drench composed of one pint of weak tobacco juice, given warm. If this is used too freely it will make him very sick, but there is not much danger of killing him while in this condition. Prepare a mop by tying a piece of cloth on the end of a stick, dip it into a weak decoction of tobacco and thoroughly wash out the horse's nostrils as high up as can be done.

Keep up this treatment from twenty to forty days, or as long as the case requires. Use the mop in the nose for eight or ten days. The drench should be administered every third or fourth day until four drenches are given. Give one or two table-spoonfuls of the Renovating Powders every day for twelve days.

Notwithstanding this disease is contagious, many writers say that bad stabling, damp localities, close and crowded stalls will produce it. The author can not, from personal knowledge, exactly agree with those writers, but he knows that such unfavorable circumstances will greatly aggravate the disease, hasten its development, and prevent a cure; hence the necessity of keeping the patient in comfortable quarters. His stall should be neither too close nor too open, but well ventilated. Protect the patient from all inclement weather, from cold and chilly rains, and from the blasts and snows of winter; feed him on light and relaxing diet regularly while under treatment and during convalescence. As soon as the disease is detected separate him from all other horses to quarters of his own. Do not shoot him, as is often the case, but set about at once to doctor him. If the above directions are judiciously carried out a cure may be expected in every case in the first stage of the disease.

Preventive.—The first thing to be done, as already stated, is to separate the diseased horse from the others, and keep them separate until all traces of the disease in the dis-

eased horse is removed; then set about to wash and scour the stalls, the manger, the harness—in fact, every thing upon which the diseased horse could have deposited any of the poison virus from his nostrils. The wash used in cleansing the parts above named of infection should be strongly impregnated with soap and tobacco. After this thoroughly rinse off the parts with a preparation of chloride of lime prepared as follows: One quart of the chloride to six gallons of water. This cleansing should be repeated two or three times. The stall should be well fumigated with tobacco smoke and burning sulphur. The stalls should be well cleaned out before using the above preparations. Better burn the harness, bridle, blanket, etc., than to run the risk of the disease spreading by using them on the healthy horse.

DISTEMPER.

This is another disease of the glands, though differing very materially from that of glanders, both in location and severity, for while the glandered horse suffers from cancerous ulcers, both of the gland membranes of

the nose, the distempered horse suffers from an inflamed condition of the salivary glands, situated near the root of the tongue. This disease is highly contagious and can be communicated some distance through the air. The young horse is more often troubled with this disease than the aged, yet no age is exempt.

Symptoms.—The first symptoms are running at the nose of a slimy whitish water, resembling very much the white of an egg, which will increase in quantity and thickness as the disease progresses. The animal will have a dry and troublesome cough, which will also increase with the disease.

Soon swelling of the throat comes on, and, if not arrested, will, within a few days, either prove fatal, or break and run, after which the horse will usually recover.

These symptoms are accompanied with high fever and sometimes swelling of the sheath.

Treatment.—The first thing to be done is to bleed in the neck vein—extracting half a gallon of blood, when the disease is in a mild type. But if the throat is much swollen, and the fever very high, take one gallon of blood.

Prepare a decoction of tobacco, and bathe his jaws, throat, neck, and breast with it. Let this bath be as warm as the horse can bear it. Do this three times each day, continuing each time for at least an hour.

Apply the Penetrating Liniment once every day for two days, to the swollen parts. Then thoroughly mix together two table-spoonfuls of gum powder, one of lard, one of soft soap, two of pine tar, and one of finely pulverized gum myrrh.

Dose.—One table-spoonful should be placed on the root of the horse's tongue, morning, noon, and night, for four or five days, or until the cough subsides and the swelling is reduced. The object of this is to stimulate the throat and give general relief. Some persons smoke their horse severely with tar and feathers, a practice we by no means condemn as useless or cruel, for this treatment will often increase the discharge from the nose and may prolong the forming of an abscess in the throat; yet, this kind of treatment is too uncertain to be wholly depended upon, while other treatments more certain and equally as simple can be employed, which will carry the horse success-

fully through the disease, leaving none of the chronic troubles that so often follow distemper to be treated in after months, and perhaps years. Instead of difficult breathing, continued coughing, diseased and inflamed eyes, that are so difficult to cure, the animal can be returned to his former duties, not a whit worsted by the disease.

An Illustrated Case.—Two years ago M. L. Grissom, of Sardis, Tenn., who is one of my neighbors, had in his charge for the crop season a valuable young horse that had some months previous had distemper, and had not been properly treated for the disease. The author was called upon to visit and treat the case, which he did at the commencement of treatment, and then left him in the hands of Mr. Grissom, who faithfully carried out the treatment according to directions for two weeks or more. The horse improved all the time. Soon his appetite returned, his coat resumed its former glossy appearance as in health, his vital energies were restored, although at commencement of treatment, and for some weeks previous he could be distinctly heard breathing a distance of twenty-five or

thirty yards, which was in a few months scarcely noticeable. He was soon put to the plow, and made a full hand all the year and improved all the time, although he was for some weeks previous to treatment a downright nuisance on his owner's hands. He traded him in a few months for a full, round price. The treatment was identically the same as laid down above for distemper. For a preventive and disinfectant, follow the direction given for glanders for the same purpose—that is, to keep the disease from spreading.

NASAL GLEET.

This disease is nothing more nor less than a species of chronic distemper, without the fever, as is always in distemper, and like distemper in the discharge from the nose, and generally partakes of the color of the feed. If on green pasture, its color will be green; if on oats or corn, it will be yellow. This is caused by the food passing into the nostrils, through the nasal cavities, for these cavities have become enlarged from the disease. The water will also pass through them while the horse is drinking, especially if the position of

the head is low. If the horse is in bad condition the chances for his recovery are not good, but if the reverse, the practitioner may attack the disease with the assurance of the disease yielding to treatment, though he should remember that it will take time and patience for its accomplishment.

Treatment.—The treatment is the same given for distemper, except the bathing of the throat with the Penetrating Liniment, as there is now no danger of abscess forming there, but as it has now taken a chronic form the treatment will be prolonged.

FARCY.

The author has had but little experience in treating this disease. He regards it as an advanced stage of glanders, and generally proves very obstinate to yield to treatment. However, if the horse is young his chances are much better for recovery.

Symptoms.—The blood having already become poisoned, it is diffused through the system, makes its appearance on the surface in small ulcers, which will soon discharge a fluid of a watery consistency, which is yellow

in color. In process of time the discharges will be mixed with blood, and will be very offensive to the smell. These pustules make their appearance on the legs, shoulder, and neck—sometimes to greater and sometimes to a less degree. Sometimes only a part of the legs are involved, sometimes none of them, and will appear only on the neck or shoulder. This is another contagious disease, and to prevent its spreading the patient should be isolated from other animals that are sound. Many persons, unacquainted with farcy as described above, might be led to the conclusion that common “surfeit,” which will be treated of in its proper place, is almost incurable. Surfeit is often pronounced farcy by the unlearned. The treatment is the same as for glanders.

BLIND STAGGERS.

Cause and Symptoms.—This disease is common in the Southern States, and is confined almost exclusively to the corn-fed horse. The horse that has access to a good pasture is seldom troubled with blind staggers. He is not attacked by this disease so much from the quantity of food as the quality. The worm dust

or excrement, so commonly found on corn in the Southern States, is the cause of the disease in every case that has come under the observation of the author. The species of worm referred to inhabits the covering or shuck of the corn, while it is maturing on the stalk.

When the corn becomes matured the worms leave it, but leave behind them the poisonous excrement on the corn, to be inhaled by the horse while eating. It finds a lodgment at the outlet of the lachrymal ducts, which are situated a short distance up the nose and on the back part of it.

These ducts are provided by nature as an outlet for the escape of the water from the eyes after it has performed its office there. They become inflamed from the effects of the dust at their outlets, which extends upward until the entire ducts are swollen inordinately, cutting off or preventing the escape of the water from the eye, consequently the water is compelled to drip from the eye.

The poison in this water is at once communicated to the eye, and soon causes inflammation of the brain. The animal becomes uncontrollable; he rears and plunges, runs

against walls or houses or any other obstruction that comes in his way, often knocks himself down, or kills himself outright. If this should not occur he will lie prostrate on the ground, kicking with his hind feet, beating in the air with his fore feet, striking his head against the ground with such force that if the spasm, which it truly is, did not soon pass off, he would end his sufferings. These spasms will last from twenty minutes to an hour. Should they pass off while the animal is on his feet he will stand perfectly still, and his breathing will be natural. These moments will be spent seemingly in enjoyment. These are the golden moments, and the only opportunity the practitioner will have for the administration of medicines or other treatment, for it is absolutely dangerous to be near, or stand in the way of the horse during the time these spasms are on him. The intervals between the spasms are like the spasms themselves—uncertain in length of duration.

Generally before the disease reaches this stage the animal becomes blind, sometimes in both eyes, sometimes in only one. When this is the case the horse will be found, if able to

stand on his feet, running round in a circle. This he will continue to do until his strength is exhausted, or until a spasm comes on. Some days before the disease reaches this stage the water will be found dripping from the eyes at short intervals. The horse will be found standing about with his head dropped, and has a sleepy, lifeless appearance. If the cranium or skull bone be tapped with the knuckles it will be found to give off a flat or solid sound. The head in the region of the brain, if the hand be placed upon it, will manifest undue heat, as in fever.

Treatment.—The first thing to be done is to give the horse ten ounces of Epsom salts, in sufficient warm water to dissolve it, to which add three ounces of strong tobacco juice. This will make the horse sick, the very thing we want to accomplish, for then we can proceed with further treatment. Give this as a drench in the horse's mouth; never drench in the nostril, which subject will be treated of in its proper place. Follow this with a second drench of two ounces of laudanum in some warm water. After the horse is once put under the influence of the laudanum he must

be kept under it daily, but after the first day he will not need so much. One ounce may suffice. Having succeeded thus far, remove from the neck vein one gallon or more of blood. Give the patient every four hours twenty-five drops of Tincture of Aconite until six doses are given. Then prepare a small piece of flexible or pliable wood or stick, about two feet long, about the size of a small pipe stem; good hickory or white oak wood will do; make the surface very smooth; confine on one end of this a soft rag, confine it there by sewing it with a needle and thread. Instead of breaking the thread off, let it extend down the full length of the stick, so if the rag should be removed from the stick while in the horse's nose, it can still be drawn out by the thread. The operator should dip this mop in the eye water, recommended in this work, insert it gently into the duct already described, and press it upward in the direction of the eye until it reaches near that point. When the stick is withdrawn the water will run freely from the nose. When this is accomplished the prospects are good for his ultimate recovery; otherwise he will die in a few days.

Another important matter is to place a blister over the region of the brain. This can easily be done by first wetting the hair with the Penetrating Liniment at the point where the brow band of the bridle crosses the forehead. Place over this a cloth folded three or four times, and upon this cloth place a hot smoothing iron, and hold it there until a blister is drawn.

From the commencement of the treatment keep the nostrils thoroughly cleansed by means of a mop and tobacco juice, as directed in treatment for glanders. If this is neglected the foulness from the diseased condition of the head will accumulate until it will be sufficient in itself to almost smother the patient. Much may be done as a preventive of blind staggers by keeping continually in the feed box finely pulverized tobacco. This makes the horse sneeze or snort, and will cause him to free his nose of the worm dust previously spoken of. These worms are more abundant on corn grown on fresh land than on old land, and they are much more numerous in the Southern States than in the Northern and Western States.

FISTULA.

This disease is situated at the top of shoulders. The swelling is attended with high fever and inflammation.

This trouble is produced by different causes. It may originate from the horse striking the top of his withers against a low door head, while passing in and out of his stable; or, from the bite of another horse; or, by the saddle pressing with undue weight on the withers.

Let the cause be what it may, the result is always the same. The bruised blood accumulates at the seat of the disease, and if not promptly treated, will soon form into pus, which must, and will find an outlet —breaking and running for weeks and months, and sometimes for years.

If the disease has been neglected until it reaches this stage, it will generally be difficult to cure.

However, we believe that with the remedies laid down in this book, fistula can be cured in every stage of the disease, unless it is where the horse has been butchered up by ignorant quacks who have resorted to the red-

hot iron, arsenic, ineffectual and inhuman treatment.

The author has frequently been called on to treat horses with fistula that had been burned so often with the hot iron that their skin had become so thick that it took days before the best known remedies could penetrate to the sensitive part. In such cases the treatment is always prolonged; and when a cure is effected, there is always scars and disfigurements to mark the seat of the disease.

Arsenic, nor polk-root should never be inserted into the tumor, as is often the case; this will eat away the muscles and ligaments, and if, after months of suffering, the horse is pronounced well, he is greatly disfigured, and permanently injured for life; his power and action can never be restored.

Treatment.—If the Penetrating Liniment is applied every day, for a few days, previous to the formation of matter, it will cure the disease, but will not cure it after the matter forms. The hot iron need not be used; to drive liniment in in this case, the May-apple salve is the next remedy to be applied, and the only one to be relied on to effectually draw

the matter out and leave the animal permanently cured.

This will prove slow in its action. If the practitioner is not possessed with a good share of patience and determination he had just as well abandon the case; but with patience and perseverance he need not have any fears about a cure, which will take from two to four weeks, and, perhaps, as many months.

Apply the May-apple salve to the tumor each morning—carefully washing it off at night.

Thoroughly cleanse the hair and skin with strong soap-suds, after which grease freely, washing it off the following morning and apply the salve again.

This course of treatment will, within three or four days, cause little pustules to form all over the surface of the tumor, from which, will exude the pus, increasing in quantity until the attendant will be astonished. When this end is reached the danger is passed, and the quantity of the salve should be increased as the quantity of matter increases.

Too much care can not be taken in the use of this salve at the commencement.

If used too freely, it will injure, instead of

benefiting the horse. Spread it all over the surface of the tumor—using as small a quantity as possible, to anoint the skin. If allowed to remain on too long, the hair will fall off, the pores of the skin will be closed, which will prevent the salve from penetrating the tumor, and subsequent applications will do no good. But should this occur, suspend the use of the salve and substitute the Penetrating Liniment for two or three days, which will prepare the affected parts for the salve again. Keep this treatment up until the free discharge of pus, above described, is obtained. The use of the salve should be continued until the pus is all discharged and the enlargement disappears. After this, keep the parts well greased with any old bacon or fried meat grease until the hair grows out again, which it will do without change of color or disfigurement of any kind, unless the hair and skin were destroyed before the commencement of this treatment.

Bleed at the commencement of the treatment, taking one gallon of blood, and ten days later repeat the operation, taking this time half a gallon of blood. Give daily of the

Renovating Powders one table-spoonful during treatment. Examine the bottoms of the horse's feet, for by this time the raging fever has diseased them, causing them to rot. Clean them off and treat them as directed for hoof rot.

An Illustrated Case.—Below we will give a case where improper and injurious remedies were used, which we hope will serve as a warning to the anxious horse owner when his horse is sick. Better give no treatment at all than to be guilty of the folly justly chargeably in the following case :

During the author's residence in the State of Alabama, a friend and neighbor of his called on him to examine a fine, black mule, then suffering with a fistula tumor of several weeks' duration, in which pus had formed, but had not broken. The author promised to put the patient under treatment the following day, with the understanding that it would take several weeks to effect a cure, but the owner did not deliver the mule to the author for treatment according to agreement, but was seen a few days later, and gave as an explanation for his failure to deliver the following

reasons: He said that on the same day that the author examined the mule, that a friend of his proposed to cure the mule without charge if the owner would furnish one pint of spirits of turpentine, which was done.

After it was brought to boiling heat it was then poured on the tumor. By next day the swelling had all disappeared. Some months after this the owner again visited the author and informed him that his mule was strangely affected with lumps, or knots, which would suddenly rise up on the sides of his neck and about his sheath, and then suddenly disappear, only to reappear again.

To the author this was not strange. The matter first formed at the top of the shoulders and should have been extracted therefrom, instead of driving it back for the circulation to take up and disease the whole system and end in we know not what. We have good reasons to believe that the free use of the fleam and continued use of the Renovating Powders for some weeks would have set matters right again, but as our advice was not taken at the outset, we were willing for the cheap horse doctor to continue his treatment.

The anxious and excited owner soon after exchanged the once valuable mule for a small gray pony, and the author lost sight of the diseased animal.

POLL EVIL.

This formidable disease is essentially the same as fistula, the principal difference being in the location, for while fistula is located at the top of the shoulder, poll evil is situated at the top of the head, just back of the ears, and is not so often met with as fistula. This disease is brought on or caused by a bruise or injury of some kind. Poll evil sometimes follows fistula sympathetically, when no other cause can be assigned. Its developments are the same.

Treatment.—The treatment laid down for fistula must, in every particular, be carried out for poll evil. To recapitulate: Up to the time matter is formed apply the Penetrating Liniment, but after the formation of matter the May-apple salve is the proper remedy. Bleed at the commencement of treatment, and ten or twelve days afterward repeat the operation.

BLOOD-SPAVIN.

This disease is located at the hock, under the membrane covering that joint, and is usually caused by overexercise, as hard pulling at heavy draughts. Sometimes the little oil sacks, so abundant about this joint, which contain the synovial fluid or oil from the joint, are enlarged from violent exercise, and once injured they will continue to grow and enlarge the hock, but not to the extent that they do when ruptured. This disease admits of a cure only in its first stage. If the enlargement is confined to the back part of the leg, and is above the joint, this will govern the practitioner in determining the first stage of the disease, but if the entire hock joint is enlarged the disease has passed into the last stage. In the first stage the little oil sacks are only enlarged, but when the hock joint is much swollen these sacks are ruptured, and the fluid escapes and will settle down around the joint, continuing to do so until there is no more room for it. Sometimes this fluid will pass down under the skin on the back part of the leg, until it reaches the ankle,

Treatment.—The Penetrating Liniment should be applied to the enlargement every second day for a period of two or three weeks; bathe in with a hot iron. If within this length of time the swelling begins to abate, continue the treatment until all traces of the disease are removed. Should the disease fail to yield to the above treatment, dispense with it and apply the Iodide of Mercury Ointment every eighth day, thoroughly rubbing it in the hair, covering the entire surface of the enlargement. The second day after this application is made follow with grease. Continue this treatment until the enlargement disappears. This disease does not always lame the horse, or materially injure him for service, but is unsightly and always injures the market value of the horse. Never suffer these lumps to be opened; it will do no good, to say the least of it, but may establish an incurable and running sore. Nor should the hot iron be applied to dry up the fluid, as is sometimes done, from which high inflammation is almost sure to result, and is communicated to the joint, from which cause the disease is aggravated instead of remedied.

WIND-GALLS.

Wind-galls does not differ materially from blood spasms except in their location. Their chief seat is on or near the ankle joints, but may be found elsewhere. This is another disease of the oil sacks, forming lumps or knots, thought by some to be filled with wind, but when opened for the wind to escape they were found to contain only a thick yellowish water mixed with blood. If the opening made should heal, the disease soon returns as bad as before, and the action of the limb impaired and sometimes fixed and stiff.

Treatment.—The same as for blood-spavin.

CURB.

This is a disease seldom met with, but as it is troublesome and will cause the horse to be very lame, especially when he first receives the injury, it might be well enough to point out its location and treatment.

Location and Treatment.—Curb is an enlargement on the back part of the hind leg, just below the hock. It is caused by hard pulling or riding, and sometimes from a blow or bruise at that point.

The best treatment is rest, and the frequent use of the Penetrating Liniment, applied to the affected part and dried in with a hot iron. This treatment should be kept up every second day until the lameness all passes away, and the enlargement diminishes.

TETANUS, OR LOCK-JAW.

Some professional men have tried to distinguish between tetanus and lock-jaw, but have failed to give distinctive symptoms, by which tetanus could be distinguished from lock-jaw. This disease comes on suddenly, and is accompanied with great nervous excitement. It is brought on by wounds of various kinds. I have seen more cases of lock-jaw the fruits of a sore back than from all other causes combined.

The author was traveling from North Alabama to Fostersville, Tennessee, in the year 1865, and was driving a mule and horse attached to a wagon. The horse had a large sore on his back, which was covered with a thick scab. Soon after starting on the journey the scab was removed by the lines rubbing it off. For the protection of the sore a

plaster of pine tar was applied. The sore by this time was bleeding profusely. In less than five minutes after the application of the plaster the horse was seized with lock-jaw. The horse was driven a few miles to a farm house, where preparations were made for his treatment by heating a large bottle of water, which was placed under him, and a heavy blanket was spread all over him. The warm water was then poured on him along the spinal column from the head to the tail, which steamed him very high. Within an hour or two the horse's jaws could be moved with the hands, and within five hours from commencement of treatment the patient had so far recovered that he could eat his feed.

Symptoms.—There are no symptoms pointing to lock-jaw until the horse is attacked. His jaws are firmly set from the beginning; his eyes sink deep in their sockets; the muscles of the face and jaws become fixed, as well as those of the neck; the influence is extended to all the muscles, causing them to become more or less rigid, and so contracted that the horse can not stand upon his feet. His ears become fixed, pointing upward; the hind and

fore feet will be drawn together, his back will be roached up, and the horse will have a distressed and woe-begone appearance.

Treatment.—What is done must be done quickly, or death will end the horse's suffering. The muscles that are so firmly fixed and contracted must be relaxed. The first thing to be done is to bleed in the neck vein, taking at least one and one half gallons of blood, provided the horse can stand upon his feet long enough. But if he should commence to blow and to puff at the flanks cut off the flow of blood at once by removing the cord from around his neck. After he has regained his strength, which will be but a short time, replace the cord around his neck, and if the opening made by the lance has closed up, and the blood refuses to flow, a little rubbing with the finger where the vein was opened will start the blood to flowing again.

As early in the treatment as possible commence the steaming process already described. Keep this up without intermission until the horse fully recovers. In addition to this, procure from the horse's leg the little scab, or crust, to be found on the inside thereof near

the hock and knee joints; grate this as fine as possible, which can be done by rubbing it on a nutmeg grater or a common file, and, if it can be done, drench him with about one tea-spoonful of this powder. But if he can not be drenched, place some of this powder in his ear, and also smoke him with some of it by placing it on some coals of fire held under his nose.

As soon as the horse has recovered sufficiently, drench him with one half pound of Epsom salts. If the steaming, described above, fails to relax the jaws, give him two grains of morphine dissolved in one pint of water. One hour later the morphine drench can be repeated, if necessary.

In cases of extreme overheat, when the horse is very fat, it sometimes occurs that adipose matter becomes softened to such an extent that it produces great nervous excitement and tetanus follows. When the disease is produced by this cause, the treatment should be the same as above described, except the bathing, which should be with cold water, instead of warm.

When the above treatment has been perseveringly carried out, the horse will usually

get well within a few days, but if neglected will certainly die within a few hours. Hence, the necessity of every horse owner possessing a reliable treatise on the horse and his diseases—giving cause and symptoms of diseases and their treatment. If such was the case, thousands of dollars would be saved annually to owners of horses.

CRAMP AND RHEUMATISM.

Some authors make a distinction between these two diseases, but as our object is only to give the reader our own experience, and that of others so far as we have personal knowledge, we will blend the two.

Old horses are more subject to the disease than the young and vigorous, but no age is entirely exempt. The horse or mule that has been overtaxed by pulling heavy loads, or has been exposed to cold rains, especially while his blood was warm, is always a good subject for acute rheumatism; also the pampered horse that has been kept continually on corn, or other heating food, for some weeks or months, without exercise, is almost sure to suffer with this disease when put to work.

Symptoms.—The horse will, after standing up all night, and having been worked the previous day, be slow to move off; will show signs of soreness of the joints and muscles of his legs if they be pressed with the hand. Some horses, while standing in their stalls, will suddenly become violently cramped in their hind legs, which are sometimes drawn almost straight—caused by the contraction of the muscles—and they will continue in this position for hours at a time.

Treatment.—The best thing to be done is to remove the cause. Turn the horse out on a good pasture; stop heating his blood by feeding him dry corn and fodder, and give him, every second day, one table-spoonful of the Renovating Powders until all traces of the disease are removed.

For sudden lameness, or cramp, bathe the horse's legs with salt water as hot as he can bear it. If the horse is in bad condition—which is seldom the case when suffering from rheumatism, for as already intimated, the plethoric horse is the one most subject to this disease—bleed from the neck vein according to the severity of the case.

STRING-HALT.

This is a very common disease, especially with mules, and is a disease of the nerves of the hind legs and hips, but the exact location, or just which nerve is affected, is not known. Much has been written on this subject, but we find that writers differ very much in their judgment. Others, in whom we have confidence, have acknowledged that they knew but little about the disease, except its existence.

Cause.—String-halt is, doubtless, due to an overaction of the nerves and muscles, there being some defect in their construction. When this is the case, overwork, or violent exercise, brings on an attack of involuntary action of the muscles.

Symptoms.—There is a sudden jerking up of the hind legs, often striking them against the belly.

These symptoms manifest themselves more clearly after the animal has been standing for some time and then moves off.

Sometimes the disease will take on a worse form; the horse will be suddenly attacked while at work. The muscles of the hind legs

and hips will be so contracted that the animal will get down while in harness and remain down for an indefinite length of time.

Plowing the dam, or otherwise working her, while the colt is very young—causing him to follow, which he always does for some days or weeks, has much to do in developing this disease.

Treatment.—Not much can be done only for present relief. Bathe just under the hip joint and back of it with the Penetrating Liniment once each day for two or three days.

Bathe the hind legs with warm salt water once each day for several days; or with camphorated coal oil for four or five days.

Give the patient, every second day, for fifteen days, one fourth of a pound of sulphur. This treatment will do much to improve the general condition of the horse; and if he is young and not taxed too heavily with labor, he will outgrow the disease.

Bleeding may be resorted to, to relax the muscles in extreme cases.

Give the horse a free run on a good pasture; if this can not be done, let him have a lot to run in, except in bad weather.

SCRATCHES.

This is a disease of the skin, and is confined to the feet and legs, manifesting itself on the back part of the leg near the heel.

It sometimes spreads to the hock and knee joints. The hind legs are more often affected by this disease than the fore legs.

Symptoms.—The legs will swell, and a yellow fluid will exude from them, sending out a very offensive odor. The hair on the affected part will be clotted together with the discharges from the sore. The skin will crack open, and the horse will manifest pain when driven through water or mud.

Cause.—The horse that is allowed to stand in the stall ankle deep in mud or decomposing manure, and fed on dry corn, which will dry up the blood and obstruct its circulation, is very apt to have scratches. Hoof-rot will also hasten the development of the disease.

Treatment.—External applications alone will do but little good. The first thing to be done is to remove the horse to clean and comfortable quarters. Take from him all heating feed, put him on generous and relaxing diet, bleed moderately at commencement of treatment,

give him each alternate day one fourth of a pound of sulphur for fifteen days. Wash off the accumulated matter with weak soap-suds, and after the hair is dry bathe with the camphorated coal oil once each day for four days. If this does not dry up the disease within six or eight days, anoint the affected parts with the sulphur ointment. Treat his feet as for hoof-rot if necessary. The Penetrating Lini-ment will effectually cure scratches within four or five days, but on account of its severe effects, when applied to the diseased parts, we use it as a last resort. Apply it all over the affected parts every other day, until three applications are made; then thoroughly grease with lard and let the patient go. Within a few days the sores will all be healed, the swelling gone, and the animal well.

THRUSH.

This is another disease of the feet, but is confined to the frog and heel. We know of no other cause for this disease than that given for scratches, further than an injury to the frog or heel, by traveling over rough roads or stony places.

Symptoms.—A thin, watery matter will escape or run out of the bottoms of the feet around the frog. And deep down between the frog and sole of the foot can be found a thick and very offensive pus, which is black and of the consistency of pine tar.

Treatment.—Give the patient a dry stall, and in addition, clean out, thoroughly, the bottoms of his feet. Wet the frog, the sole, and heel every morning with the Penetrating Liniment, drying it in with a hot iron. Keep this treatment up for one week, omit for four or five days, then apply again. Do this until the discharges from the heel and frog have ceased. Bleeding may be dispensed with in this disease, as it is local instead of general in its nature, and seldom affects the blood.

CRACKED HEEL, OR GREASE.

This is also a disease of the feet, and we know of no marks or symptoms distinguishing it from thrush except the opened, cracked, and dry appearance of the heel, and the extra or fungous growth of the frog, which gives it a rough, ragged appearance.

Matter does not escape so freely therefrom,

in this disease as in thrush. If neglected, it will terminate in that troublesome disease known as foot evil. Therefore, it should be promptly treated. There is no reason to expect it to get well of itself.

It is often the forerunner of more troublesome diseases.

Treatment.—Apply the Penetrating Liment to the diseased part every second day, for six or eight days, drying in with hot iron; then give an interval of rest for three days, and apply again. Continue this treatment until the fungous growth of the frog is destroyed, and the heel and frog are well.

The horse should not be worked while suffering with this, or any other disease of the feet; nor should he be exposed to dew, rain, or mud, while undergoing treatment. When the ground is dry the patient may be put on the pasture. Give him sulphur in the same manner as directed for “thrush.”

SWELLED LEGS AND ANKLES.

Some writers have tried to distinguish between swelled legs and ankles, but have failed, so far as the cause of the disease is concerned.

All the difference known between these two diseases is in their location—the cause is the same in every case that has come under our observation.

Treatment.—Sometimes one leg, or ankle only, will be swollen, or enlarged, by being bruised or injured. When this is the case the treatment should be warm salt water; and after the hair is dry, apply the Penetrating Liniment once a day until the animal is well. But when more than one leg or ankle is swelled, it is an evidence that the cause is somewhere else—generally from a diseased state of the feet, and should be treated as directed elsewhere in connection with such diseases.

When the cause is removed the swelling will disappear.

Hoof-rot is an accompaniment of swelled ankles and legs, and is nearly always the immediate cause of this disease. The horse with hoof-rot should not be allowed to run on wet pasture, where dog-fennel and other poisonous plants grow, as it will cause the horse's legs to swell to an alarming extent. Such poisoning has often been mistaken for snake bite.

HIDE-BOUND.

This disease is the fruit of hard usage, or from some long-standing disease, where high fevers have raged that have closed the pores of the skin and dried up the blood, causing it to become thick and sluggish. The pores of the skin being closed, its oily secretions are dried up; the hair loses the live and glossy appearance it has while the horse is in good health.

Symptoms.—The hide adheres closely to the bones, ribs, neck, and legs—especially about the joints, which impedes his progress in traveling, causing him to have a slow, stumbling gate. His repeated groanings, while under the saddle, indicate the pain it gives him to move.

The digestive organs of such a horse have become deranged, and his excrements will be dark and hard.

Treatment.—A reaction must be brought about; the blood must be thinned and purified. The bowels and stomach by this time have become diseased, sympathetically, and must receive their share of the treatment.

Remove from the neck vein one gallon of blood, and fifteen days after repeat the operation, taking a half gallon this time.

Give the horse daily one table-spoonful of the Renovating Powders.

Continue the use of the powders until his excrements are soft, and have that yellow appearance common in health, and until his skin becomes loose, and his hair has a healthy appearance. This can be hastened by currying and rubbing.

The bleeding will thin the blood and relax the muscles of the stomach and bowels; the powders will give tone to them and the system generally; will purify the blood, and act admirably on the skin, opening its pores.

This treatment will cure in every case of hide-bound, if carried out according to directions, though the improvement will be slow and gradual.

SURFEIT.

Here again we must differ with some writers who contend that surfeit is only a disease of the skin. Our experience will not allow us this conclusion, for not a few horses

have we bled for this disease, and found their blood thick and dark; while, if only the skin was diseased, the blood would not be affected.

We have cured a number of horses of surfeit with no other treatment than the use of the fleam.

Causes.—The corn fed horse is the one most often attacked with this disease, though other causes, besides high feeding, will bring on the disease, or at least, will develop it. The horse that has been driven until his blood is heated and then allowed to stand out in a draught of cold air, or is exposed to chilling rains, or allowed to drink freely of cold water when he is very warm, has been known to break out with surfeit in a few hours.

Symptoms.—The sudden appearance of this disease, and its rapid progress, is sometimes very alarming to the inexperienced horseman, though it has never been known to prove fatal in a single instance.

It should be met with prompt treatment, as the suffering manifests the troublesome nature of this disease by the horse continually rubbing himself until the hair drops off, and the skin becomes sore.

This disease, in its milder form, makes its appearance on the neck and shoulders; also on the belly and between the fore legs—rising up in the form of little knots or pustules, upon which will be formed a scab or sore, that will soon break and discharge a mattery fluid that will spread if not checked.

Treatment.—As already indicated, the animal should be bled moderately, and given freely of sulphur until two pounds have been administered.

Apply to the affected parts an ointment composed of one part of sulphur and three parts of lard.

Two or three applications daily will dry up the sores.

MANGE.

This is a contagious disease, and can be communicated to other horses by the use of the same harness, saddle, or blanket, that has been used upon the diseased horse, or by rubbing against the same stake or wall, or in any other way whereby the sound horse may come in contact with the affected animal.

Cause.—In this disease we believe that both

the skin and blood is diseased. Although it is contagious, we believe that it is much aggravated by filth and neglect. A lack of proper care and grooming has much to do in developing this disease. High feeding and want of exercise also contribute to its development.

Treatment.—Bleeding again must be resorted to. Take one gallon of blood. Exclude from the patient's diet all heating feed. Give him clean and comfortable quarters during inclement weather; but, when the weather is favorable keep him on the pasture. Give him daily one table-spoonful of Renovating Powders until a pound has been given.

As this is a contagious disease the patient should be kept away from other animals.

Wash the stall, and all places where he has rubbed, with strong lime water; this will prevent the disease from spreading.

STIFF COMPLAINT.

Old horses are the ones most subject to this disease. It is brought on by hard labor, abuse, and neglect.

A horse troubled with this complaint will

stumble when there seems to be no occasion for it, and is slow in his movements.

Such a horse is always dangerous to ride, and is disqualified for any service except it be in the plow or wagon.

Treatment.—Blood-letting is again necessary. Take one gallon of blood, and at the expiration of twelve or fifteen days take half that quantity. Administer the Renovating Powders in table-spoonful doses daily until one pound has been given. Let the patient have unbroken rest for one month, or until he regains his action. Feed on generous diet, or keep him on a green pasture if it be in season. Keep him in a comfortable house if in winter.

WARTS.

Of these there are two kinds—blood and seed warts. The blood wart is the most troublesome, because it is hardest to remove. It makes its appearance on the hocks, ankles, ears, and sometimes on other parts of the body. The blood wart is a fungous growth, and increases in size very rapidly, and at an early stage becomes raw and is easily irritated and almost continually bleeding. Warts

seldom appear singly. When one makes its appearance, others may be expected to follow.

Treatment.—For a blood wart take purified nitrate potash, pulverize fine. If the wart is raw and bleeding, sprinkle the potash all over the surface as long as any will adhere thereto. The second day after the application is made, wash off with warm water, using a soft rag or sponge, all of the crust that has accumulated on the wart. And while it is wet from the washing, apply the potash as before. Continue this treatment until the wart is eaten away, after which apply the Penetrating Liniment, for the purpose of destroying the roots, each alternate day until three applications are made. After this the parts should be kept well greased. Should this treatment fail after a fair trial, prepare the following: Take a strong solution, composed of caustic potash and water, and apply it to the wart by means of a little mop at morning and at night; be careful at each application to remove the crust formed on the wart. After the wart is eaten down apply the Penetrating Liniment and follow it with an application of grease as directed above. Great care must be taken

while using the potash liquid. If it is allowed to run down upon the sound parts it will produce a sore, and unnecessarily punish the animal. This trouble can be avoided by greasing around and below the wart with any kind of grease that will thoroughly fill the hair, and allowed to extend down as low as the liquid may run. A small quantity of this solution applied to the wart will be sufficient, as it is very strong. The same treatment just laid down for blood warts will destroy seed warts. The horse troubled with warts should have his blood purified by giving him the Renovating Powders in table-spoonful doses each alternate day for two or three weeks; or, in the absence of the powders, sulphur may be freely used. If the wart be hanging by a stem, as is often the case with seed warts, tie a small, strong cord around the stem sufficiently tight to stop the circulation, and the wart will die and drop off in a few days.

SADDLE AND HARNESS GALLS.

These sores are caused by an ill fitting saddle or harness, and are of frequent occurrence in warm weather. The skin will become

chafed and raw; the hair will slip off, leaving the surface of the skin naked and bleeding. Sometimes deep-seated abscesses are formed, which, after a time, will break, discharging large quantities of pus, disqualifying the horse for service for weeks and sometimes for months. Sometimes these sores, especially upon the back and at the humerous-joint or point of the shoulder, develop into what is called a "sit-fast," which is a gristly formation under the skin.

Treatment.—In the first stage—that is, when the hair is first rubbed off—all that is needed to perfect a cure is to let the animal have rest and keep the parts well greased—salty grease preferred—to prevent a thick scab from forming, or remaining on too long, in which case there would be a scar, or naked spot, to remain.

In the second stage of the disease, when the parts are much swollen and the inflammation is high, the Penetrating Lintment should be applied once each day, thoroughly wetting the surface of the inflamed and swollen part. If matter has not formed, the Penetrating Lintment will effectually cure in every case. But

if pus is formed, the May-apple Salve should be used.

SORE NOSE AND MOUTH.

This trouble originates from the horse grazing in the pasture where poisonous weeds grow, while the vegetation is wet with dew or rain. The nose and lips become raw and sore and swollen.

Treatment.—Take one pint of water, to which add two table-spoonfuls of the tincture of “Golden Seal.” Wash the sores with this preparation morning and at noon, and at night grease the sores with lard, and on the following morning wash it off and apply the solution of Golden Seal as before. Continue this treatment until the sores have healed and the swelling disappeared; then grease the parts well and let the patient go.

VERMIN.

These little pests originate from poverty, bad stabling, and neglect of grooming. The old and enfeebled horse and also the young and feeble colt are the ones most often infested with them; but the plethoric, well-fed horse will be troubled with these pests if allowed

to associate with the horse afflicted with them. The latter part of winter or early spring is the season when vermin are most abundant, though the feeble and emaciated horse will hold them until he improves in flesh and sheds his winter coat. Vermin are a source of great annoyance to the horse, and especially to the young colt that can not thrive while being infested with them, and often dies from no other cause.

Treatment.—If the horse's condition is bad, bleed him moderately at commencement of treatment, and give him daily one table-spoonful of the Renovating Powders. Make an ointment of one ounce of sulphur, one half ounce of red precipitate, and four ounces of lard. Rub the horse with a small portion of this—equally distributing it as much as possible—once every third day until the vermin are all destroyed, which will be only a few days. The free use of the curry-comb and brush will hasten a cure.

CEREBRAL DISEASES.—APOPLEXY.

This disease of the brain, or blood—for it is a diseased state of the blood which brings on

this cerebral disturbance—is caused by the blood becoming too abundant, thick, and sluggish, and a sudden determination of it to the brain brings on the attack.

Symptoms.—The muscles will twitch and jerk; the eye-balls will dance and the lids will snap; the head will be carried too low while walking, sometimes almost to the ground; and while standing still his head will be pressed against the wall or manger. The blood vessels will be full and corded, and he will walk awkward, with a staggering gait, and have a high fever. His excrements will be dark and scanty; the bowels will have a tendency to costiveness; the appetite will fail, and the patient will be thirsty. All these symptoms are not present in every case, but are to a greater or less degree. The horse will grow worse from day to day, and as the disease advances will show signs of frenzy. Before a fatal termination he will fall to the ground in convulsions.

This disease seldom attacks the lean horse that is regularly exercised, but may be brought on any horse by an overheat or overfeeding; though the pampered horse is the one usually attacked with apoplexy.

Treatment.—The first step in the treatment is to relieve the brain and nervous system. Blood-letting is absolutely indispensable. Remove from the neck vein one gallon of blood, and one hour later, if the symptoms have not abated, repeat the operation, taking half a gallon of blood. Bathe the head in the region of the brain with the Penetrating Lini-ment; evacuate the bowels as soon as can be done by the free use of the clyster, consisting of one pint of lard. If this does not move the bowels within half an hour, follow with an injection of warm soap-suds; repeat this every half hour until the bowels are moved. Drench with one quart of moderately strong pepper tea with one table-spoonful of salt dissolved in it. Follow this with one ounce of laudanum in a little warm water. Six hours later drench with half a pint of Epsom salts. Keep the patient upon green and relaxing feed.

The horse once attacked with apoplexy will be very subject to a return of the disease; he should never be overworked, but should have regular exercise, and should be sparingly fed on dry corn.

EPILEPSY.

This disease is seldom met with in our country. The trouble seems to originate from the same cause that apoplexy does. The symptoms are very much the same, though epilepsy comes on more suddenly than does apoplexy, and passes off as suddenly as it comes on. Sometimes the animal begins to project the head forward. The neck will be stiff, the head elevated, and in continual motion, the muscles will twitch before a spasm comes on. Sometimes the horse will show none of these symptoms, but will fall suddenly to the ground, the attack coming on so quick that the rider will scarcely have time to free himself from the stirrups and get out of the horse's way. He will lay there in great agony and groan all the while, striking with his feet. The inexperienced horseman will think that his horse will be dead within a few minutes, but to his surprise, the spasm will pass off, and he will rise to his feet, and seemingly be as well as before the attack. He may be free from another attack for some time, but it may return as suddenly as before.

Treatment.—But little can be done for the horse afflicted with epilepsy, as there are seldom any symptoms sufficiently clear to warn the horseman of its approach. If the treatment given for apoplexy be carried out in this case, as soon as the spasm passes off, it may and sometimes does keep them off for some days and perhaps weeks, but we place much more confidence in the care and feeding than in the treatment to prevent a return. The unfortunate owner of a fitified horse, as he is called, will never own another if he can avoid it.

PARALYSIS.

This form of disease is of rare occurrence. We have never seen but two or three horses that we were satisfied was afflicted with this disease. This disease is caused by some derangement and perhaps suspension of the nervous action, and is doubtless the result of some injury of the spinal cord, from which the hips and thighs become paralyzed.

Treatment.—The patient should be bled at intervals of fifteen days apart, taking about half a gallon of blood each time, for a period of six or eight weeks. Apply the camphor-

ated coal oil to the hips and thighs every day for three days, and then apply once each week. Give the Renovating Powders daily in table-spoonful doses, until the patient fully recovers.

BLIND TEETH.

These can be found upon the upper jaw-bone of the horse, in front of the jaw teeth. Sometimes they are situated near to the jaw teeth, and sometimes a little distance from them. They are shorter than the jaw teeth, are round and peg-like shaped. They can be readily felt with the thumb or finger at the point designated. They are easily knocked out, which should be done, as they are of no service whatever to the horse and are intruders. All that the operator needs to remove them is a square-ended piece of iron and hammer. No instrument for this purpose is better than a large flat file. Place the end of this against the tooth, and strike the other end with a hammer. The tooth will give way readily, as it has no roots, and only rests on the jaw-bone.

There is more prejudice against blind teeth than should be. They are by many considered

marks of unsoundness, weak eyes, and big head. It is true the horse with diseased eyes, or with big head, may or may not have blind teeth, yet blind teeth never produce these diseases, though we will not go so far as to say that they will not aid in the development of these diseases. They do contribute their share of fever and inflammation, combined with other causes in their development.

DISEASES AND ABUSE OF THE TEETH.

The teeth of the horse, as well as of man, are subject to disease and decay, but while it is hereditary in man, it is not so with the horse. As a natural consequence the teeth of the old horse must give way and become worn-out, as well as the teeth of man, for which there is no remedy.

Any disease of the stomach that generates gases will cause the teeth to rot. The teeth of such horses will always be foul. There will be an accumulation upon them, especially near their roots, of a yellow coating, which will continue to increase until a crust is formed which, if not removed, will soon destroy their enamel. The gums will become sore and

inflamed, and take on that form of disease called scurvy. As soon as the teeth are discovered to take on this form of disease, the cause should be promptly removed by correcting the diseased stomach, for which purpose change the diet of the horse from dry to green feed. Keep constantly in the feeding troughs wood ashes mixed with salt. Do not depend on giving a dose once or twice a week; keep this continually in the trough, and let him eat his feed off of it. The disease may run on until the teeth have become coated with a hard crust, which should be removed by means of a file, after which dress the teeth with sandpaper. This treatment will be of no lasting benefit unless the acid condition of the stomach is corrected. A diseased stomach is by no means the only cause of bad teeth. The use of many vile preparations, administered to the horse as medicines, is often the cause not only of permanent injury to the teeth, but also to the stomach. Prominent among them are blue-stone, arsenic, calomel, copperas, and all mineral poisons.

To convince some persons of the injurious effects of these so-called remedies would be

impossible, and when we meet such persons we never throw away much of our time in arguing with them. To such as are willing to be instructed we would say, better administer no medicine at all to your horse than give him such as would injure him.

Not only are the teeth, mouth, and stomach injured by the use of certain medicines, but the kidneys are often diseased from the same cause. Such animals will always be subject to colic pains, and often the ignorant owner will again administer medicine, the effect of which they know nothing. There is no apparent swelling of the bowels when the seat of the disease is in the kidneys, and is traceable to no other cause than the administration of some of the remedies recommended by ignorant "quacks" for the general improvement of the horse.

The teeth of the old horse are never so smooth and white as the teeth of the young, unless the causes just named are present with the young.

We will now dismiss this subject, as there is to be found in another part of this work a chapter devoted to the care and management

of the young colt, in which the subject of the teeth will again be discussed.

LAMPAS.

Young horses are more subject to this affliction than the aged, but none are wholly exempt. The young colt soon after weaning, and all through the period of teething and shedding; the grown horse; the old and feeble; the well-kept and plethoric, are all subject to this ailment.

Lampas is an inflamed and swollen condition of the gums and roof of the mouth. The gums often swell and protrude beyond the points of the teeth, which prevents a horse from eating his feed, especially if it be corn in the ear, or other coarse feed.

Treatment.—Scarify the gums in a number of places until they bleed, after which wash the swollen parts with a weak solution of lime-water and rub them with salt. Carry the animal through this treatment for four or five days, or longer if necessary. Give him daily one table-spoonful of the Renovating Powders until ten doses are given. Give him green,

soft feed, if it can be procured; if not, give him meal, instead of corn.

The red-hot iron should never be tolerated for the purpose of burning the "lampas" out, which is often done. There is nothing in the mouth that ought to be burned out, besides the teeth are often injured by coming in contact with the hot iron. It is to be deplored that so many persons are found who, without discretion, care, or feeling, are willing to punish and torture the horse by such malpractice, and who have nothing better to guide them than a blind zeal or inclination for doctoring horses

COLIC OF THE STOMACH.

This disease is first confined to the stomach, but it often extends to the bowels. While it is confined to the stomach there is no visible swelling. The ribs that surround the stomach will not permit it to expand so as to be seen, as can be done when it is colic of the bowels. Here is where a mistake comes up, for it is a prevalent opinion among horsemen that if there is no swelling, and the animal places his nose to his side, he is troubled with "bots," and drenches are given him to make them let

go their hold. When the horse is suffering from any of the following diseases: colic of the stomach, colic of the bowels, inflammation of the kidneys or bladder, he will point out, as best he can, the seat of the disease by placing his nose to his side. If it be colic of the stomach he will place his nose opposite that organ; if the seat of the disease be farther back, he will extend his nose farther back. This is his only means of pointing out the seat of his disease, which, to the experienced practitioner, is very clear and decisive.

Cause.—There are a variety of causes. Any thing that will interfere with the digestive organs of the horse will produce colic. Excessive eating and drinking are the most common causes. The frequent administration of improper medicines will produce, or cause a diseased state of the stomach. Such a horse will be subject to colic.

Symptoms.—The animal will manifest pain by restlessness and show a disposition to lie down; will place his nose against his side, and will change from one position to another.

These symptoms lead the horseman to at once conclude that his horse is suffering with

bots, and that he must be drenched with something strong enough in its nature to make them let go their hold. Just here some grave and serious mistakes are made. The stomach of the poor, suffering animal is made the receptacle of every vile nostrum that the ignorance of man can suggest; fuel is added to the fire continually.

No amount of argument can convince some persons that the bots is not the greatest enemy that the horse has. Their argument is that they have seen the horse die with all these symptoms, and when he was opened found his stomach riddled by the bots. To this we can bear witness, so far as the stomach being eaten into holes by the bots is concerned, but at just what stage of the disease the little bots declared war against the horse, and at what time the battle commenced, we acknowledge our ignorance. But to say, as some writers do, that the bots do not harm the horse is carrying the argument too far on our side.

We are satisfied that as long as the horse is in health, and his digestive organs perform their office, the little bots are contented in their home, and will never do the horse

any harm until he is disturbed by a diseased state of the stomach, or by some of these so-called remedies for their destruction. In such cases we believe that the bots do hasten a fatal termination of the disease.

Treatment.—The first thing to be done is to give the animal something that will correct the deranged condition of the stomach, and to relax the muscles of the same. This can readily be done in most cases by giving a drench of salt water as hot as the horse can bear. Bleeding from the neck vein will give relief as often as any thing we have ever tried. But should the above-named treatment fail give the patient one half ounce of asafetida and one half ounce of chloroform, mixed with four ounces of whisky. Put all this into enough warm water to make a drench, and in connection give a clyster of lard or soap-suds to evacuate the bowels. The above-named treatment has cured in every case of colic of the stomach, otherwise known as bots, with one exception.

FLATULENT COLIC.

Flatulent or wind colic, as it is commonly called, is confined to the bowels. This kind

of colic often follows colic of the stomach, but sometimes occurs independent of it, as in constipation or stricture of the bowels.

When stricture of the bowels takes place the most effectual and safe treatment is the process of back-raking. This is done by the operator greasing his hand and arm and gently pressing his hand into the rectum; continue to press it forward until the obstruction is reached. This should be gently removed, bringing it forward until it is all removed as far up as the hand of the operator can be extended. Sometimes a clyster will answer the purpose, which should be composed of lard or soap-suds, mixed with a small quantity of tobacco juice. Repeat the clyster every few minutes.

The other treatment in this case is bleeding from the neck vein. We have relieved more horses of flatulent colic by blood-letting than by any one treatment.

Another cause of flatulent colic is a diseased state of the kidneys. The fever and inflammation in that region is communicated to the bowels. When this is the case the remedies recommended for inflammation of the kidneys

should be made use of in connection with the treatment laid down above.

Another remedy that comes to us from a reliable source for inflammation of the kidneys is to apply wet salt on the horse's loins, opposite the kidneys. This has been known to give immediate relief.

An Illustrated Case.—About the year 1872 we were traveling a distance of seventy-five miles, and were leading a horse belonging to another man. Suddenly the horse was taken sick with flatulent colic. This occurred in one of the mountain districts of North Alabama, which at that date was thinly settled. There was no medicine at hand, and the distance between houses was so great that it was some hours before any thing could be done for him. By that time the horse was much swollen, and when allowed to stop would suddenly fall to the ground with violence. After a time a farm house was reached, but there was no remedy to be found there that the author had ever made use of. But something had to be done or the horse would soon die.

In the absence of a regular syringe one was substituted, which was hastily manufactured

from a large cane, and with it the horse was given an injection of about two ounces of tobacco juice. This made him very sick; he could scarcely stand upon his feet; his muscles were relaxed, and within a few minutes the animal was fully relieved. This was our first experience with an injection of tobacco juice, but have since that time made use of it in extreme cases, when other remedies had failed, with the most satisfactory results.

INFLAMMATION OF THE KIDNEYS.

This disease of the horse is of more frequent occurrence than perhaps the horseman is aware. We have been called upon to treat this disease when no amount of argument could convince the owner that there was any thing more the matter with his horse than colic. The symptoms are in some respects alike.

Cause.—This disease is caused by abuse in almost every case. It can be brought on by hard work, hard riding, feeding on unwholesome food—rotten corn, molded fodder and hay—and by the administration of poisonous drugs, such as bluestone, copperas, and Span-

ish flies, all of which are administered to improve the condition of the horse.

It is astonishing how readily some persons will administer whatever may be suggested as a remedy to improve the condition of their horse.

If the horse is in health it is absolutely injurious to give him any medicine. If his appetite is bad, give him exercise and change his feed, and he will always shed his hair when the proper time comes for him to do so.

Symptoms.—The horse will manifest this disease by making frequent efforts to urinate. He will stop suddenly while in the harness or under the saddle, and stretch himself out, which he may do a number of times before the flow will commence. And then it is often small in quantity and highly colored, and at times will be entirely suppressed. The patient will have a slow and awkward gait, and will straddle his hind legs as he walks.

Sometimes the sheath swells; his appetite fails. He seldom lies down, unless the disease has advanced, and he is in great pain. When this stage of the disease is reached the

symptoms are sometimes mistaken for colic. The horse will roll and turn over from side to side, and will rise up quickly to his feet. The fever will be high in the region of the kidneys and bladder, the pulse will be hard and quick.

Treatment.—Prepare the following drench: Three ounces spirits nitre, one ounce oil of sassafras, and half an ounce oil of juniper. Divide this into three doses, and give one in the morning, one at noon, and the other at night. Give this mixed in water. Bleed at commencement of treatment. Take from a half to one gallon of blood, according to the severity of the case. Bathe the hips and loins with strong salt water. If in winter, the water should be warm; if in summer, it should be cold. Give the horse green feed, if it can be procured, excluding dry corn and moldy feed of any kind. Keep him on the Renovating Powders until all traces of the disease have disappeared. Give one tablespoonful each day. Bathe the loins twice each day in the camphorated coal oil; or in the absence of this, apply the Penetrating Liniment once each day for three days.

INFLAMMATION OF THE BLADDER.

This disease in its symptoms is so much like inflammation of the kidneys that the practitioner is often at a loss to diagnose the disease. There is but one way by which he can tell one disease from the other, and that is by inserting the hand into the rectum; if the disease is in the bladder, the heat and inflammation can be felt there; if the trouble is at the kidneys, the fever there will betray the presence of the disease.

Treatment.—The treatment is essentially the same for inflammation of the bladder as it is for inflammation of the kidneys, with the additional use of a drench twice each day for three days, composed of whortleberry leaves made into a tea, one pint at a dose.

CALCULI, OR STONE IN THE BLADDER.

This is a disease of both the kidneys and bladder. Having its origin in the kidneys, the stone is formed there, and while small passes into the bladder, where it continues to grow until its weight and rough surface inflames the bladder, and is a continual annoy-

ance to the horse. They are sometimes found lodged in the neck of the bladder, almost stopping the flow of the urine. In such cases the bladder is too full; the horse manifests great pain, and if there is not speedy relief will soon die.

Symptoms.—The distinctive symptoms in this disease are the following: When the bladder is overcharged with urine the horse spends most of his time lying down; the pressure on his bowels while down seems to give him relief. The water in the bladder can often be heard, as the water in a jug when shaken. The animal will sometimes, while lying down, extend his fore feet forward, as though he would get up, but instead of doing so he will turn back again upon his side.

Regular exercise, in some cases, will be found the best means to prevent undue accumulation of water in the bladder, but should not be resorted to as a means of cure while the horse is in that condition. After the urine commences to flow it will be discharged in large quantities until the bladder is emptied, which will, of course, give relief.

Treatment.—We have but little confidence

in any remedy administered to the horse after the stone is formed. The only way to free the horse of it would be to perform a very difficult and hazardous surgical operation. About all that can be done safely is to give remedies to relieve and let nature do the rest, as these stones sometimes come away of themselves.

Give daily for several weeks one tablespoonful of the Renovating Powders. To relieve acute attack of this disease, bleed from the neck according to the severity of the symptoms, and give the nitre preparation, same as recommended for inflammation of the bladder, then bathe the hips and loins with salt water.

DIABETES.

This disease is an involuntary discharge of the urine, and while there is no pain present, nor fever that can be detected, it will soon tell on the patient by reducing his flesh and destroying his vital powers.

Treatment.—Give the animal rest and clean and wholesome feed. If in season, give him pasture. Put him on daily use of the Renovating Powders for some weeks.

We will say, in this connection, that for all diseases and derangements of the urinary organs, whether it be of the kidneys or bladder, if the urine be bloody or thick, the general treatment laid down for the kidney and bladder is the treatment for all urinary troubles, especially the use of the Renovating Powders, for we believe them to be the most effectual remedy for these troubles that can be administered; they are slow in their action, but sure in their effect, and always leave the horse's system much improved.

FOUL SHEATH.

This is a disease very common with the old horse. It accompanies gravel and other urinary diseases. It is often overlooked, or if noticed at all by the horseman, is regarded as a matter of no consequence. But not so; while some horses will linger along and never get down, others will become worthless. Diseases of a more grave nature will be produced by this one.

Symptoms.—The horse will become stiff, especially in his hind extremities; his sheath will swell and become sore; he will scarcely

be able to get up when down ; the water will dribble from his sheath ; and upon examination, his sheath and adjacent parts are found to be covered with a black, waxey, and offensive matter ; the end of the penis, upon examination, will be found to be obstructed by what is commonly called a bean.

Treatment.—The sheath should be washed out with weak soap-suds ; if made too strong it will burn and irritate the parts. After the sheath has been well cleansed, and the bean in the end of the penis removed, grease with lard ; keep up the greasing for several days, or until the swelling and soreness has disappeared. Give the horse for several weeks all the sulphur he can be induced to eat.

COLT FOUNDER.

This is a disease of the genital organs, and comes on during the months of pregnancy. Old mares are more subject to this disease than the young and vigorous. The mare that has once been troubled with colt founder should not be bred again, though she may appear to have fully recovered, for when she conceives the old trouble will return, and grow

worse each time she proves with foal; if she survives at foaling time, the offspring will be found weak and sickly, and in the majority of cases afflicted with urinary trouble, or die with scours.

Symptoms.—The animal grows stiff; gets weak in the loins; can scarcely get out of the stable; fever is very high; the pulse runs up to sixty or seventy when the symptoms first make their appearance. They will grow worse until the foal is born; the patient will often get down, unable to rise to her feet, and if raised would be unable to stand. There is high fever about the kidneys and bladder from the beginning.

Treatment.—A cure is out of the question while the mare is carrying the colt. If she continues on her feet until delivery of the foal, the owner may hope for a cure. Some mares recover very soon after delivery without treatment of any kind, while others improve slowly under the best treatment known.

When the symptoms first appear, put the patient on relaxing diet; exclude the use of dry corn and fodder; bathe the loins with the camphorated coal oil for some days, and if this

should fail to relieve her of the weakness manifested, then apply the Penetrating Liniment every second day for eight or ten days; then omit the liniment for the same length of time. After the days of omission, apply again if necessary. After the mare has delivered the colt, she should be bled once, and the Renovating Powders administered until she is well.

If she should get down before delivery, she should be raised and kept in a swing until she is strong enough to stand. The best plan for that purpose is to provide some strong cloth, wide enough to cover the entire space between the fore and hind legs, and of sufficient length to be at each end, after it has been passed under the mare, attached to two rails, or poles—one at each end. Having succeeded thus far with the preparation, commence to build a rail pen around her, keeping the ends of the timbers to which the cloth is attached above the pen. By this means the animal can be raised to her feet as high as desired. She should be raised of sufficient height that she can rest on the cloth under her on her feet. The pen must be well staked, or she, in her

struggles, will throw it down. After this is done, erect a shed over her to protect her from the sun and rain.

THUMPS.

This very common ailment of the horse is caused by some obstruction, or hinderance, to the flow of the blood through the pulmonary artery that very seriously interferes with the heart's action.

Cause.—It is a very prevalent opinion among horsemen that overexercise is the cause of thumps, from which opinion we differ. It is often true that the horse that has been driven too hard, or that has been ridden too freely, will have the “thumps;” and it is equally true that the horse will often have thumps that has not been exercised; yet to be worked while suffering with an attack of the disease will increase the difficulty very much.

Symptoms.—There is a throbbing of the sides and flanks so severely that it can be heard for several feet away; this soon passes away for an indefinite length of time, to manifest itself again when the horse is freely exercised. We have never known a case of

thumps to prove fatal, yet it is claimed by some writers that such has been the case. Some horses are very subject to the thumps, which greatly depreciates their value.

Treatment.—But little can be done by medicating a horse. Give him a drink of cold water in which some salt has been dissolved; this will usually stop the throbbing. Give one tea-spoonful of oil of tar each day for three days.

THE BLOOD.

The blood is not the cause of diseases, yet there is scarcely a disease that the horse is subject to that does not affect the blood. Fever inflames the blood, whether it be of a local or general character. A bruise or wound on any part of the horse will generate fever, and the blood will carry it to all parts of the system. The poison that arises from such a wound is soon communicated to the blood—then the blood is said to be diseased.

Treatment.—We should first find out the cause of the fever. If it has its origin or is caused by some wound or injured part, that should first be treated, and afterward the

blood should be cleansed, for while some local cause exists and extends its influence throughout the entire circulation, it will be useless to give remedies to purify the blood.

THIN BLOOD.

Some diseases have a tendency to thin the blood. Among these are dysentery, scours, consumption, and diabetes.

THICK BLOOD.

When the blood is thick and circulation slow, this denotes the presence of fever.

BLOOD-LETTING.

Some of the modern horse doctors object to phlebotomy. They contend that it impoverishes the blood, and some of them have gone so far as to have a horse pictured with half a dozen attendants at his side, while the horse has the appearance of being so weak and exhausted that he can hardly stand upon his feet. Such a sight has never been seen by the author, nor by the person who drew the picture, unless the horse was bled by the author of such a picture, or by some other person who does not know any thing about treat-

ing a horse for disease. Neither do they know enough about him or his blood, nor the treatment of diseases, to entitle them to any notice.

We would have passed them by unnoticed, but for the good of others, who might be influenced by such, we say that no such trouble or feebleness to the horse ever grow out of bleeding. It is true any horse can be bled to death. If the horse is suffering with such diseases as diarrhœa, dysentery, scours, thumps, or consumption, he should not be bled; such would be debilitating and harmful instead of improving. But when high fevers exist, either local or general, blood-letting is beneficial. Sometimes the horse can be successfully treated in fevers without bleeding, but would always be benefited by it. It reduces inflammation, relaxes the muscles, and reduces the quantity of diseased blood, making room for new and pure blood.

True, if there were not internal remedies given, the blood would soon become diseased again. Bleeding is not for the purpose of purifying the blood, but to prepare the way for medicine to follow that will cleanse it, which

would do more harm than good, if administered before the bleeding.

The blood is too thick and sluggish, the circulation is slow, and can not take up the medicine and carry it through the system; hence the necessity of its being reduced in quantity. The horse never has too much blood if it is pure, but when it is diseased, as described above, it can be too abundant.

The amount of blood to be extracted will vary in different cases; it will depend upon the nature of the disease—the stage it has reached, and the length of time it has existed. The blood will be found very dark and thick in big head, fistula, pole-evil, hide-bound, stiff complaint, lock-jaw, glanders, distemper, founder, pneumonia, and all diseases of long standing, where the inflammation is high.

In acute inflammation it is seldom necessary to bleed more than once, but in chronic cases, as in founder, distemper, glanders, big head, and big jaw, it may be necessary to repeat the operation a number of times, yet the quantity of blood taken should be less than in acute inflammation.

We will now describe the operation of

bleeding so plainly that any person of ordinary understanding and courage can successfully carry out every part of it without danger of injuring the horse. The animal suffers no pain from the operation; the small incision made in the skin and vein may sting and smart a little, but will not cause any suffering.

The phlebotomist should prepare himself with a fleam, made for the purpose, and very sharp, and also a hard or firm stick about one inch in diameter, twelve inches long, and not too heavy.

Cord the horse's neck, near his shoulders, with one end of a rope, with a slip, that in case of necessity the cord can be easily slackened. The cord should be drawn only tight enough to make the jugular vein swell out. Often the cord is drawn tighter than necessary, under which pressure the horse gets restless.

Having succeeded thus far, the operator will take his place at the left side of the horse's neck, with stick in his right hand and the fleam in his left. Place the fleam on the vein, give it a gentle pressure against the skin, then with the stick give it a sufficient blow to force

it through the skin and into the vein. The blood will at once commence to flow freely, and continue until the cord is loosed, when it will stop at once. The edges of the skin, where the opening was made, should now be fastened together by means of a brass pin and a string, or piece of horse hair. One day and night is generally long enough for the pin to remain. This completes the bleeding.

We have bled hundreds of horses, and have never seen any of the bad effects described in some of the little pamphlets styled "horse books," which only serve to misguide the reader and advertise the author's medicine.

Having given the directions in reference to bleeding, we will now proceed to give directions for the administration of medicine and general treatment of sick or diseased horses.

THE CLYSTER.

Any liquid medicine injected in the rectum is termed a clyster. This is done by the aid of a syringe. In extreme cases of lock-jaw and laryngitis the clyster is the only way that medicine can be administered, or that nutriment can be given. The throat is so swollen

in laryngitis, and the jaws and muscles so firmly fixed in lock-jaw, that to give any thing by drenching is out of the question.

In obstinate cases of scours or dysentery, a clyster of one ounce of laudanum, in a little warm water, or one tea-cupful of tea of the common blackberry root, injected will often relieve when other remedies fail.

When the animal can not eat, he may be kept alive a long time by the administration of corn-meal gruel, made very thick; or, perhaps still better, would be to boil sweet milk and thicken with flour. When nutriments are given, the clyster should always be cooked.

DRENCHING.

This is, by far, the most common mode of giving medicine, and, if carefully carried out, is entirely safe. We will now give the plan in detail as practiced by us, which is simple and safe, both for the operator and patient.

Prepare the drench of whatever kind desired; put it in a bottle large enough to contain the drench, then procure a stick about four feet in length; split open the end of it with an ax until a rope can be inserted; tie a

loop at the end of the rope as a plowman does for hand-hold ; insert one strand of the rope in the split ; wrap the rope around the stick to prevent it from coming off ; place one strand of the loop in the horse's mouth, as you would the bridle bit, and let an assistant take hold of the stick and gently elevate his head until it is high enough, then turn the drench down the horse's throat. Do not pour too much into his mouth at one time ; allow him to lower his head after he has swallowed, and after he has rested a little while raise his head again and turn some more into his mouth ; keep on in this way until he has swallowed all that is necessary. If this course is pursued there will be no broken bridles, as is often the case when the horse is confined to a limb, and the horse will not strangle when drenched in this way. The horseman should always be kind and gentle to his horse, and especially so while drenching him.

We enter our protest against drenching through the nostrils, because we have seen a number of horses injured in this way. We have seen one fine mare that was injured in this way ; she was running at one of her nos-

trils as freely as if she was in the last stage of glanders; this trouble was caused by drenching dye-yeast through the nostrils. Another case was a fine gray horse belonging to Mr. J. S. Kennedy. The animal had been drenched through the nostrils with chloroform during a spell of colic. The chloroform had penetrated the lachrymal ducts, inflaming them. The inflammation had extended to the eyes, and he had a severe cough. When we were called to treat the case, general fever and inflammation were very high; the pulse was as high as seventy. We took the case with but little hope of effecting a cure, as this was a new derangement to us—the books being silent on this subject we were left to exercise our own judgment.

First, we bled the horse to reduce the inflammation; then bathed his throat with Penetrating Liniment; washed out his nostril with a decoction of tobacco, and applied the eye wash freely to the eyes; he was then turned over to his owner, who continued the same treatment until the horse was permanently cured.

Diseases of the Throat and Lungs.

LARYNGITIS.

This disease is confined to the upper part of the wind-pipe and surrounding glands, and soon proves fatal if not successfully treated, which is often difficult to do, by reason of soreness of throat and the difficulty the horse has in swallowing.

Cause.—The principal cause of laryngitis is exposure to cold and chilly rains in the latter part of winter and early spring.

The sudden changes in the temperature of the weather are sufficient in themselves to produce this disease. The thoughtless owner often rides his horse until his blood is warm, then confines him to a stake or tree, takes off his saddle, and leaves the animal exposed to a cold rain till he becomes chilled. Space forbids an enumeration of the exposures the horse is subjected to, all of which are sufficient to establish disease.

Symptoms. —The first symptoms are enlarged glands with sore throat, and next swelling and tenderness of the larynx, sometimes coughing. The head projects, the nose extends forward, by reason of the swollen condition of the throat and between the under jaws, the neck becomes stiff, the breathing is short, and can be heard for some distance, the patient drinks with difficulty, the entire throat is involved and so swollen that it is almost impossible for him to swallow food or medicine.

To Diagnose the Disease.—Place the ear to the chest, and if there is no obstruction heard there in his respiration, proceed up the windpipe with the ear, and if the difficulty is at the upper end of the same, together with the preceding symptoms just described, it will be safe to pronounce it laryngitis. The air can be plainly heard to pass out at the upper end of the windpipe.

Treatment.—If the disease has advanced as far as described above, it will be difficult to drench, for by this time the throat is swollen so much that the patient can scarcely breathe. What is to be done must be done quickly. Bleed copiously from the neck; let the blood

run freely until six quarts are extracted. Bathe the chest and under jaw with a strong decoction of tobacco, as hot as the animal can bear. Do this every four hours until the swelling is all gone.

Bathe the throat and between the under jaw-bones with the Penetrating Liniment morning and night for the first day. After this bathe twice each day with the camphorated coal oil liniment.

Confine to the horse's throat a poultice of boiled oats or cotton seed. If the horse can bear it, drench with the following. Take two ounces of ginger and one ounce of gentian; boil them in water until the strength is all out; then give three doses, of three ounces each, of the tea, morning, noon, and night. Also mix together one ounce of chlorate of potash, three ounces tincture of golden seal, one ounce tartar emetic, and twelve ounces of water, and give one ounce of this compound morning, noon, and night.

If the patient can not be drenched without strangling, give the remedies in the water he drinks. Never give him icy cold water.

In this condition of the throat the horse

can not eat. Give him as much corn meal gruel as he can be induced to drink. Keep the patient in a good, warm stable, or at least where he will be out of the wind. If the bowels be constipated, move them by giving injections of warm soap-suds every half hour until they are moved. If the muscles are contracted, showing signs of tetanus, bathe with salt water as directed for that disease.

PNEUMONIA.

This is a disease of the lungs, and is caused by the animal being overheated and allowed to cool off too quick. Sometimes by allowing him to stand out in cold rains until chilled, but occasionally a change of the weather from warm to cold is sufficient of itself to bring on the disease.

Symptoms.—The symptoms are not always the same in every particular. Some cases that have come under our observation commenced by the animal rolling for some hours, as with colic. Others discharged from the nose large quantities of saliva of a white and frothy appearance.

But the following symptoms are always

present: After the disease has progressed for some hours the head will be drooped, the ears will protrude to the right and left, the pulse will be feeble, but will run as high as sixty or seventy per minute. The animal will walk awkwardly, and sometimes stagger, the feet and ears will be very cold, the breathing will be hurried, the patient will stand with his forelegs wide apart, and as the disease progresses they become more so; he will stand upon his feet as long as he is able, and when he can no longer do so he will sink, after which he soon dies. There is a short and feeble cough from the beginning. Pneumonia often terminates in congestion of the lungs, the vessels become gorged with blood and are ruptured; the air cells are filled with it. When this occurs the horse will die within a few hours.

Sometimes the disease will linger for a long time in his system, and in such cases will terminate in consumption of the lungs. After death, upon examination, the lungs will be found filled with putrid matter.

Acute pneumonia will run its course within a short time, often killing the horse within

twenty-four hours. The lungs of such are found after death to be ruptured, and the air cells filled with blood.

Treatment.—Bathe throat, neck, and chest with a decoction of tobacco as hot as the horse can bear it. If the pulse is strong and hard, bleed, taking half a gallon of blood; if they are weak and irregular, do not bleed, but drench with four ounces of Epsom salts in one pint of water.

Prepare the following: Take equal parts of gentian and ginger, boil until the strength is out; strain and give one half pint of this tea every six hours; bathe the feet and legs twice each day with warm salt water; give green feed—corn must be excluded. Let the patient have all the water he will drink.

COUGHS.

Coughs are caused by exposure to cold, eating moldy and dusty feed, and follow distemper, bronchitis, and pneumonia.

Treatment.—If the cough originates from foul feed, the remedy will be to give the horse sound, wholesome food, and the cough will readily stop. A cough is not always so easily

checked, but often proves obstinate. If it has its origin from some former disease the treatment will be tedious. Examine the little ducts, and if they are closed, or sending out matter, wash them out daily with warm tobacco juice; bathe the throat and chest three or four times daily with the same, and apply the camphorated coal oil to the throat once each day for a week. If the cough does not stop, apply the Penetrating Liniment once each day for three days. Give daily one table-spoonful of the distemper preparation by placing it on the root of the tongue.

If the cough is following some lung trouble, we know of no treatment that will do any permanent good. Cure the disease that has caused it, and the cough will abate.

BELLOWS, OR HEAVES.

This disease causes difficult breathing, and generally has its origin in the lungs. We readily admit that we know of no remedy that can be relied upon to cure this disease, yet judicious care and feeding will, in most cases, relieve to some extent.

Treatment.—Never give dusty hay or clover

to the bellows horse; keep him on clear oats or some relaxing diet. Never drive or work him while his stomach is full of fodder or hay. Give every second day one table-spoonful of the oil of tar with five drops of extract of as-safoetida just before his feed is given him; do this for ten days or longer, if the patient is not relieved within that length of time.

The Pulse.—The location and condition of the pulse is of the utmost importance to the practitioner; in some instances it is the only means by which he can tell the condition of his patient. There is nothing that will guide him so correctly in determining when to bleed, and the amount of blood to be taken, and the administration of medicine as the pulse. If the pulse are quick and throbbing, bleed freely; when they are weak and the animal debilitated, do not bleed at all. But in chronic and long standing cases, such as big head and big-jaw, founder and fistula, the pulse will be full and corded: bleed freely at intervals of fifteen days. In inflammation of the bowels they will be small and wiry: bleed copiously. The horse's pulse can be found at the lower side of the lower jaw-bone; there can be felt

at that point, running across the jaw-bone, an artery that feels like a cord the size of a common pipe-stem ; by pressing the fingers gently upon this, the pulse can be felt and the number of beats clearly counted, which in the horse, in health, should be from thirty-five to forty per minute. When the horse is in health the pulse is soft and slow, unless there is some excitement of muscles or nerves. Fifty to sixty beats per minute always betray the presence of fever, and when the pulse is as high as eighty a fearful state of excitement is present. In tetanus, blind staggers, and laryngitis, the pulse will sometimes reach one hundred per minute.

Animal Poisons.

SNAKE BITES.

The horse is not often snake bitten, yet it sometimes happens. The best known remedy to counteract the poison is large potions of proof whisky. One pint should be given at the commencement of treatment as a drench; this should be done as soon as the animal is bitten. Give half a pint every hour afterward for six or eight hours. Wash the wound and inflamed parts every few minutes with the Penetrating Liniment.

The symptoms are great swelling at the point bitten and the adjacent parts. The horse will refuse his feed; will be very thirsty; will soon manifest giddiness, and his eyes will look glassy. In the absence of whisky, give the horse three ounces of spirits of turpentine, and bathe the wound and surrounding parts with it.

THE BORER WORM.

This is the maggot of the borer fly that abounds on the great plains of the West; it is not found east of the Mississippi river. This fly follows the herds of cattle and horses without doing any injury to them until some animal receives a wound from which the blood is permitted to flow, when the flies will deposit their eggs in the wound, and from that time on the poor animal is doomed to suffer great torment. Unless promptly treated, which is not easily done, the maggots will increase, both in size and number, and work their way into the flesh and under the skin; the poor animal will lose flesh all the time, until he is at last compelled to succumb to these tormentors to be eaten alive.

Treatment.—The Penetrating Liniment is the best known remedy. Cut open the bunch containing these maggots, and freely apply the liniment, twice each day; it will find its way to every part of the abscess, and as soon as these little pests are touched by it they will die. Not only will the liniment kill the maggots, but its curative and cleansing qualities,

so well adapted to heal and cure old sores, makes it the very remedy needed in this case.

INTERNAL POISON.

Our object is to warn against the use of such drugs as are given to improve the condition of the horse. Many of these are poisonous, but are so slow in their effects that they are often overlooked. The owner never suspecting that he has unwittingly been the cause of his horse's death by drugs given previously.

SPANISH FLIES.

This medicine is often given during the breeding season to excite the horse. The man who is guilty of such an act should not have the patronage of respectable people. If this practice should accomplish the end sought, by exciting the horse for a short time, it will by no means increase the number of colts: such colts will be weak and deficient in form. If this practice is kept up with the horse, he will soon become useless for breeding purposes; he will always suffer with colic, and his kidneys will become diseased.

We know of no remedy for poison of this kind, and the man who willfully administers medicine of this kind, for the purpose named above, deserves nothing better than to lose his horse.

NUX VOMICA.

This is used to purify the blood and improve the general condition of the horse, but it injures the teeth and stomach, and causes a derangement of the bowels. Nux vomica may appear to improve the condition of the horse for a time, but the injurious effects that often follow its use make it altogether hazardous to give it to the horse.

The injurious effects manifest themselves by a hot breath, irregular pulse, the saliva is stringy, the eyes are a whitish-yellow, excessive flow of urine, and in the last stage convulsions and then death.

Treatment.—Give the horse a drench of lard, and one hour later eight raw eggs. Evacuate his bowels as soon as possible, by giving a clyster of lard, which should be repeated every hour until a free movement of the bowels is obtained. Give the animal plenty of sulphur and resin for three weeks.

COPPERAS.

This injures the teeth and stomach, and for that reason should be discarded altogether in the treatment of the horse.

TINCTURE OF ACONITE.

This is a deadly poison, if given in overdoses, but can be given with benefit in fevers.

Dose.—Twenty-five drops every four hours, until four doses are given; and after a lapse of eight hours, give again.

CREOSOTE.

This medicine will prove fatal if given in overdoses, but from ten to twelve drops may be given in colic with safety.

MAY APPLE.

This is very drastic; if given in large quantities will prove fatal, and for this reason it should never be given to the horse. If the horse should need a purgative, there are other medicines more harmless and safe that can be given. The root of the May Apple, when properly prepared into a salve, constitutes one of the best remedies where pus has formed, as in "fistula" and "poll-evil."

POISON OAK.

This plant is found on the trunks of trees growing upon rich land; it is more abundant on cultivated land than elsewhere. The horse will eat of the vine which seems to do him no injury, except to poison his nose, producing blisters that form into scabs.

Treatment.—To one pint of water add one table-spoonful of tincture of golden seal; wash the inflamed parts with this preparation in the morning, and grease them at night. Wash off the grease on the following morning and bathe again with the golden seal; repeat this daily until the sores are healed and the inflammation gone, which will require only a few days.

POLK-ROOT.

This is a violent poison, and dangerous, if administered to the horse in any quantity, no matter how small.

Give, as an antidote, one pint of grease, or sweet oil, with six eggs broken into it, as a drench. Follow this, one hour later, with a drench of half a pound of Epsom salts, dissolved in warm water; evacuate the bowels with an injection of warm soap-suds.

Care and General Treatment.

This subject is one of vital importance to every horse owner, for here is laid the foundation for almost every ailment that horse flesh is heir to.

We give, as our opinion, founded upon an experience of many years' practice and close observation, that no disease of the horse is hereditary. It is true, the mare afflicted with colt founder, gravel, and some other diseases, during pregnancy, brings her offspring into the world feeble and weak, and in a majority of cases they soon sicken and die. The fever of the mother, before the colt was born, has enfeebled him; or, if he was well at birth and able to suck, the fevered milk of the mother would make him sick, either with kidney troubles of some character, or, if possible, worse, obstinate costiveness of the bowels, or scours.

No mare, afflicted with any disease that produces during gestation, should be selected

as a brood mare. Her disease is always made worse by breeding, and, as has already been intimated, she brings a weakly colt into the world soon to sicken and die. Hence, the importance of selecting the most healthy and vigorous mares to raise from.

Some breeders prefer the spring season as the best time to breed the mare; while others prefer the fall season. The circumstances should have much to do with the time selected. If the mare is kept for breeding purposes alone, and does not work during the spring and summer months, and is kept upon a good pasture, we would prefer that she bring her foal in the spring; but if she has to work during the summer on the farm, and is then allowed to rest during the autumn and winter months, we would prefer that she bring her colt late in the summer or early in the fall, for the following reasons: If the mare is allowed rest and pasture for several months after the colt is born, her milk, which is the only feed the suckling should be compelled to subsist on, will be clear of fever, and more abundant, than if she was compelled to subsist on dry feed.

It is a wonder the mare gives suck at all that has been fed only on dry corn and hay, and at the same time compelled to work hard all summer. But the greatest wonder of all is that the colt that is compelled to drink such milk should live through the sucking season. Doubtless he would not if it were not for the green grass he eats during his stay on the farm while his dam is at work in the plow.

The farmer who keeps a mare for both labor and breeding purposes generally prefers that she bring her foal in the spring season. In some cases this will do, while in others it will not. Such mares are generally confined in the stable and highly fed on dry feed the last few months of pregnancy, the very thing that should not be done. If she must be fed on dry feed alone during the time she is carrying her colt, let it be in the early months.

The high feeding and confinement described above are sure to create fever, of which the foal will suffer in consequence.

The mare need not be made fat enough for the butcher stock to produce a good colt. It is true she should be cared for and fed all she

needs, but food should be a light and nutritious diet.

DISEASES OF YOUNG COLTS.

There are only two diseases common to the young colt—namely: bowel troubles and urinary. Costiveness of the bowels and scours are common with the colt the first few days of its life. Its urinary organs are often diseased from its birth; this may consist of suppression of the urine, or of bloody urine.

Cause.—The cause of disease at so early an age of the colt can not be traced to any other cause than the diseased condition of the mother before the birth of the colt, or the fevered condition of her milk.

Treatment.—If the trouble be suppression of the urine, examine the end of the penis, and if there is any obstruction there, which is sometimes the case, remove it by washing the affected part with warm soap-suds; this will relieve the patient at once. If there should be found a covering of skin that prevents the flow of urine, make an opening for it with the point of a sharp knife. Bloody urine nearly always proves fatal to the young colt. The only safe way to treat them for this disease is

through the mother's milk ; to give medicine to the colt is extremely hazardous.

Particular attention should be given to the mare in regard to feeding. Remove from her all heating feed, and give her daily one table-spoonful of the Renovating Powders ; also each morning give her one half ounce of spirits nitre in a little cold water, and at night repeat this drench.

For constipation, give the mother a drench of one half pound of Epsom salts, and give the colt an injection of melted lard.

For scours, the mare should be drenched with one half pint of tea, made by boiling the root of the blackberry. Give the colt a clyster of forty drops of laudanum in a little water in which one tea-spoonful of Epsom salts has been dissolved.

Some horsemen have an unchangeable rule of feeding their horse the same quantity of food, whether at work or not, whether in winter or summer, which often does irreparable injury. There is more reason to expect the horse to thrive and enjoy health under such circumstances than his owner. We know of no better way to convince the farmer

or horseman of his mistakes in this particular than to ask him what his own needs are regarding diet. Does he eat the same quantity of food when he is idle that he does when at hard labor? We know he does not; his system and appetite does not demand it; his stomach could not digest it if he did. It is a law of nature that we must not violate, that when our labor or exercise is light our diet must also be light, either in quantity or quality. If this be true in regard to man, is it not equally true in respect to the horse? Not only should the horseman be careful with reference to the quantity of feed given at all times to his horse, but nothing is of more importance than the quality of feed. The horse that is fed upon molded fodder, corn, or hay, can not thrive, and will soon become diseased from the use of such food. From this kind of treatment originate obstinate and distressing coughs, inflammation of the kidneys and bladder, indigestion and derangement of the bowels. One ailment after another will follow until the horse dies.

The water that the horse drinks is another matter of importance that is too often neg-

lected. If the food given the horse tells so soon on his system and destroys his health, will not the water he drinks from cess-pools and stagnant ponds also injure his health? The ox, it is true, prefers the water of ponds and from the mud holes in the road, but not so with the horse. It often happens that the horse is taken from home, where pure water has been furnished him, and placed upon the road where he has access only to stagnant water, which he is apt to refuse. He will almost famish before he will drink such water.

Too many farmers are ready to conclude that so long as the horse will drink from the ponds that this water is good enough. We suppose if man was placed where the poor but faithful animal is, under the control of and subject to the will of others, and was not consulted as to his wishes, that he would relish such water. Such treatment of our faithful servant, the horse, is wrong. Our pecuniary interest forbids such a course; our humanity should forbid it. A man has no right to so abuse that which a merciful Creator has placed here for his benefit.

STABLE MANAGEMENT.

The horse should be furnished with good, comfortable quarters to shelter him from the winter's blast. The stall should be large enough for him to turn around in and also to lie down his full length and rest himself.

Often a horse is compelled to remain upon his feet all night on account of his stall being too small. The stall should be kept clean; the decomposing manure should be removed every day. Nothing will bring on diseases of the feet sooner than to compel the horse to stand in filth and mire through the long winter months. Such treatment will cause hoof-rot, corns, contraction of the foot, or narrow-heel, grease, navicular disease, ring-bone, thrush, and scratches. There is no ailment of the horse but what is made worse by a diseased condition of the feet.

The horse should not be confined in his stall when the weather is favorable. Have a lot adjacent to the stable that he may exercise himself in, if a pasture can not be provided. keep salt and wood-ashes in the feeding trough at all times; this will correct the acidity of

the stomach and aid digestion. Some farmers consider it sufficient if the horse has access to salt every few days, but the better plan is to allow him to have it daily.

The farmer is thoughtful enough to give salt to his horses, especially young colts, while on the pasture, thinking that the horse on green feed needs salt more than one on dry feed ; but it is just the reverse. True, both the corn and grass-fed horse needs salt, but if either is to be neglected, let it be the horse that is kept on green feed.

PASTURING.

To place the horse in the open air, where the pleasant rays of the sun can fall upon him is to place him in his natural element; here he is at liberty to roam over the pasture, and feed at will, which is his chief delight—this is manifested by his actions.

What horseman has not watched with pleasure the actions of his horse that has been confined in the stable for a time, and then given his liberty upon the pasture? Before he would stop to partake of the delicious grasses or clover, he would run and play as he had

not done for months past. If it gives our horse such pleasure to have his liberties for a short time, after he has faithfully and uncomplainingly served us, is it not our duty to provide him with a pasture?

Giving the animal his liberties, which he so much enjoys, is the smallest matter of consideration in connection with pasturing. The health of the horse, the saving in feed, with other advantages too numerous to mention, make the subject one of vital importance to every horse owner.

The horse that is regularly pastured is seldom diseased. As a proof of this, go to the grassy plains of the far West, where the animal is a stranger to corn and fodder; and, where his only food is that provided by nature. Here, in a herd of hundreds together, with no shelter to protect him from the storms of winter, we find the horse in his most perfect state, almost clear of disease, and the age to which he often attains is almost thrice that of the stable-fed horse.

THE YOUNG COLT AND HIS TREATMENT.

The healthy young colt will require but little attention during the sucking season—which should be about six months—this, however, depends upon conditions. If the colt is feeble and weak, or if pasture can not be provided for him, he should not be weaned until it can be furnished. When the time arrives to wean the colt, he should be removed a sufficient distance from the mother that he can not hear nor see her, and he will soon forget her.

The colt should now have the very best attention possible, especially as regards his diet. He should be provided with a green pasture to start on. He is not able to masticate the hard corn, for his teeth are young and tender, his system and stomach are not adapted to such heating food—derangement of the bowels and stomach would be the result.

The colt should be provided with a green pasture the first winter after he is weaned, of which none is better than a field of rye. Do not try to carry him through the winter on corn and other dry feed, for it will dry up his blood, and generate or produce many of the

troublesome skin diseases, such as surfeit, mange, and vermin.

The subject of stabling the young colt is highly important; too much attention can not be paid to this part of his treatment; he is too often turned out to shift for himself, without shelter, while the grown horse is carefully cared for. This is another grave mistake. All horses should be well housed in winter, but if any are to be deprived of this comfort, let it be the grown horse.

If corn is fed to the colt, it should be chopped, as his front teeth are too young and tender to bite it off of the cob, and his jaw-teeth are not sufficiently strong to masticate it.

TEETHING.

In discussing this subject we will only speak of the teeth of the colt after he is weaned. Perhaps but few horsemen know the extent of the fever about the mouth and gums of the colt during the period of cutting and shedding the teeth; nor the danger there is of other more serious troubles arising at this time.

The fever and inflammation about the head will often affect the eyes, and cause them to

become diseased or inflamed, which will increase from month to month until the animal goes blind.

The bad condition of many colts is due to the attendant fever at shedding and cutting teeth. The bowels at this period are often deranged: they will be either too constipated, or too loose. These ailments are often caused by the fevered state of the mouth.

A free use of sulphur, with a continued supply of wood-ashes in the feed trough, is the treatment or preventive in this case. The wood-ashes will correct the stomach and digestive organs, while the sulphur will prevent the fever, and also keep off vermin, from which thousands of colts die annually.

Though it will be a little digression from the subject, we will here warn the unthoughtful of the danger at weaning period that the mare is in when the colt is taken from her.

The milk will accumulate, and if not kept milked out, will very soon produce fever.

The feed of the mare should be reduced as soon as the colt is taken away, and sulphur and resin given her until the milk is entirely dried up.

GRAIN.

The horse that is regularly worked should be allowed a good share of grain, but, as already stated, the amount should vary according to the labor performed and the condition of the animal. If he is in good health and at work, liberal feeding will suffice; but if idle, in low condition, or bad health, the quantity of grain should be small.

There are only two kinds of grain fed to the horse in this country to a considerable extent, viz.: oats and corn. The former is decidedly the better, because it is not so heating in its nature. It is light and easily digested. The horse can eat it with impunity. In a practice of twenty years we have never been called upon to treat a horse made sick from eating oats.

Corn is objectionable as a food for the horse for many reasons. The fat created by its use is not so healthy as that made by feeding oats and other more light and digestible food. Corn is a heavy diet and very heating. It is the cause of more diseases of the horse than all other articles of diet combined. It pro-

duces a long list of diseases scarcely known in those countries where it is not fed at all. The horse that is fed exclusively on corn is seldom well. Flesh that is suddenly formed is never so solid and healthy as that which is formed slowly. It is our opinion that more horses are destroyed annually in the United States by excessive feeding on corn than by all other causes combined. Large numbers of fine specimens of young horses and colts have been ruined by overfeeding with corn. Old horses do much better fed on corn than the young, the chief difficulty with the young being the fevered state of the gums brought on by such feed.

Some horses do not masticate the grain sufficiently, if in which case it is swallowed, the stomach is taxed to digest it and colic ensues. Many of the troubles arising from feeding corn, as indigestion, sour stomach, and colic, might be obviated by having the grain ground at the mill. If the feed was prepared in this way, a less quantity would suffice. Enough would be saved in feed alone to pay the toll at the mill, and the horse preserved from much suffering.

Wheat and rye are wholesome feed for horses, but should also be chopped. Wheat bran is also good when mixed with other food. All chopped feed should be mixed with water before given to the horse.

WINTER FEED.

It is highly conducive to the horse's health to provide for him as much as one feed each day during the winter, of either pumpkins, potatoes, carrots, turnips, or cabbage, of which he will partake greedily. If this course was pursued by our farmers there would be fewer diseases among their horses, besides, they would be lively, fat, and sleek.

CLEANSING AND CURRYING.

It can not be truthfully said that a horse is well cared for unless he is regularly curried and rubbed. The curry-comb and brush may be regarded as the sheet-anchor of all well-managed stables.

The horse that is kept all the time on a pasture does not need grooming as much as one confined in a stable. Horses kept constantly confined in the stable require regular

cleansing, and the horse that has been driven on the road until his legs, belly, and perhaps his entire body, is covered with mud, should not be allowed to stand all night in this condition, but should be cleansed as soon as possible. Wash the mud off his legs, rub them dry, and if he has been driven very hard, bathe the legs with warm salt water. This will prevent soreness and fever, which always follow such abuse.

The confinement and darkness of the stable are unfavorable to the action of the pores of the skin. The pores do not throw out their oily secretions to the surface so readily when the horse is confined in the stable as when he is on the pasture, or in the open air, neither do the dead particles of the scarf-skin detach themselves at the proper time so quickly. The sunshine and rain will loosen and soften the scarf-skin, while the horse is in the open air, and for this reason he does not need the care and grooming that he does when confined in the stable.

Nature needs assistance, if the horse is confined to the stable, to keep the skin healthy and give the hair its live and glossy appear-

ance always present in health; hence, the necessity of the curry-comb and brush being applied often with the addition of an occasional washing with water, in the summer season, which will ameliorate the horse's prison life.

There is always large quantities of dust continually passing through the air in the stable, which lodges upon the horse and finds its way to the skin, where it closes the pores and creates more or less fever. This dust should be removed at least twice a day with the curry-comb and brush.

Not only should the hair on the body of the horse be well cleansed, but his legs should receive the same attention. By this means of cleansing, the pores are kept open, the skin is warmed, the hair is oiled and kept alive by nature's own fountain. The marked difference in the appearance of a horse regularly curried and rubbed and one that is neglected is apparent to the least observant. Currying and rubbing are as essential in all skin diseases as medicine, and sometimes more so.

If the horse is allowed no more exercise than going from his stall out into the open air

and there remain until he is well rubbed, it will give him great relief and he will be much better contented for some hours after his return than before.

The curry-comb should not be too sharp. The skin of some horses is very thin and sensitive; such animals should be cleaned with a brush and coarse woollen cloth. Nothing gives the hair a more lively and glossy appearance than a woollen cloth, and by no other way can the soreness be so well rubbed out of the legs of the tired and wearied horse than with a cloth or the hand. By this means the circulation is increased, the muscles and sinews that are sore and contracted are relaxed, and the horse can lie down and take his needed rest with comfort.

CHANGES OF TEMPERATURE.

A wise Creator has well arranged all his works, and in nothing is his wisdom made more clearly manifest than in the adaptability of the winter coat given the animal creation, for their protection against the cold blasts, the chilly rains, the bleak snows, and biting frosts of the winter season. There is a wonderful

provision by nature for this purpose in arrangement of the varying conditions of the skin. The opening of the pores as summer approaches, and their closing as winter draws near, is necessary for the comfort and health of the horse.

Another admirable adaptation to the surrounding circumstances and influences is shown by the increased growth of the hair on the approach of winter, when it is needed for the animal's protection, and then by its gradual falling off at the return of spring, when it is not needed. These changes that nature makes are seldom attended by any inconvenience or injury to the horse, but there are other changes he is subject to, brought about by man, that often affects his health.

One of the unfavorable changes is brought about by taking the horse out of a comfortable stall into chilling rain or falling snow; another is by driving him very hard, or until his blood is warm, and then hitching him out in the cold mud or storm. The horse should never be turned out into an open lot or pasture to spend a winter's night after a hard day's drive. On account of these, and many other changes of

which the horse is subject to, he often falls a victim to disease, especially of the lungs, feet, and skin. If we are compelled to leave our horse out in the open air, in unfavorable weather, it would be an act of humanity and economy to give him a blanket.

BLANKETING.

Money could not be spent more economically than in purchasing a good blanket for the horse; it would last for years, and save the horse much suffering.

A stable sufficiently open to be comfortable in summer, is not adequately warm in winter, without additional covering. We much prefer the stables to be sufficiently open in summer, but should be so constructed that they can be closed in winter, or the blanket provided, which would be cheaper, and we believe better. The horse is sometimes placed in the stable chilled and wet with rain, when the weather is not freezing cold; in such a case, the blanket should be placed over him until his hair is dry, then removed.

DISINFECTANTS.

The crowded stables are the ones most in need of disinfectants. The livery stable is never properly kept unless a liberal use of disinfectants form one feature of its management; and no horse is safe when confined in a stable with a large number of strange horses, unless this course is pursued. Distemper, glanders and mange, are often lurking in the stable long before the owner is aware of its presence. Where strange horses continually come and go there is no assurance that a diseased horse has not been among them. Glanders may exist in an incipient form for weeks or for months, without being detected, yet it is highly contagious all the time.

Tobacco, lime, and sulphur, are the best disinfectants known, for stable purposes. Tobacco is an antidote for glanders and distemper, and if it is used in the manner prescribed elsewhere, as a disinfectant for these diseases, there need not be any fears of the disease spreading.

Tobacco will cure glanders in its worse stage, often when other remedies fail, and is

the only substance that can be fully relied on as a disinfectant of this disease. Some of the leaves of tobacco burned in the stable, while the horse is present, will work wonders in keeping off the disease, and greatly improve the hygienic condition of the building; and should any infection be lurking there undiscovered, the tobacco smoke will effectually drive it away.

Tobacco does not only change the qualities of the infected atmosphere, but its virtue consists in its action upon the horse's system, neutralizing the poison, the very source of the disease.

Sulphur is well known as a disinfectant of great worth for those types of diseases which generate foulness and putridity within the system. For this reason it should be freely administered to the horse. It may be employed by fumigation to decided advantage. When burned in the atmosphere, sulphurous gas is formed, which is of great value in counteracting contagious influences.

Lime is highly esteemed as a disinfectant to counteract the evil effects of decomposition of vegetable matter. It should be placed in a

vessel and kept wet. It will neutralize the odor and injurious gases arising from rotting manure.

If a glandered horse has been in the stable, the manger and all parts of the stall where any of the discharges from the nose of the diseased horse could be left should be washed with strong lime water.

Where it is known that a contagion has lately existed in a stable, tobacco may be relied on as the only safeguard, though we do not mean by this the additional use of lime and sulphur is to be discarded. Keep finely-pulverized tobacco in the feeding trough for some time after the contagion has disappeared.

EXERCISE.

Horses should have daily exercise in some way; the one on the farm generally has enough of this in his routine of farm labor, but the one that is kept for pleasure, and that spends most of his time in the stable, is the one that suffers most for exercise. Such a one should have regular exercise to prevent his legs from swelling, and becoming stiff and puffing at the joints.

Exercise will improve the spirit and general condition, and will prevent disease. The exercise for the pampered horse should be mild, for they are not capable of bearing much fatigue. Horsemen should be very careful in working the unexercised horse—great evils have resulted from this unthoughtful course. Lock-jaw has resulted from pampered horses being driven until their fat was overheated, and partially dissolved.

In consequence of such mismanagement many of the best horses in our country have failed, while if they had been exercised with care until they became habituated to hard labor, they would have been serviceable for a long time, without any suffering or disease.

The most suitable time for putting the young, or the pampered horse to work, is in the spring or autumn season, while the weather is cool; his work should not only be light, but he should not be worked only a few hours at a time during the first days, and as he becomes accustomed to his work increase his time per day and also weight of draught. Many a horse has been ruined for life by being loaded too heavy at the first, or by being

driven until his strength was exhausted and he was compelled to stop. If such a horse had been given a few minutes' rest, before he was forced to stop from exhaustion, he would have been willing to resume his labor; but instead of the needed rest being given him, the ignorant and unfeeling driver applies his whip, which should never be done. Those who have never tried it will be surprised to see the happy effect produced by going to the head of the young horse, when he is exhausted and fretful, and rubbing his nose, patting his head, and at the same time using kind words.

Exercise should be proportioned to the horse's age, the young horse requires more than the old. Young animals of every kind have a disposition to activity, but the exercise should not be violent; much depends upon the manner in which it is given. To promote the health and preserve the temper of the animal, the exercise should be moderate at the beginning and ending. The horse may be pushed out of a walk into a trot, or even into a gallop at the middle of the exercise, but he should be brought in cool and quiet.

The untamed horse should never be in-

trusted to boys or the inexperienced horseman ; the owner should have him exercised, within his own sight, nor should the young horse be driven over a strange road ; and for hours he should have the association of some horse he is acquainted with driven or led by his side. If the necessary care were taken by the owner in the selection of the person selected to handle his horse, he would thereby avoid many of the accidents common in breaking and exercising his horses. It should be the owner's pleasure to see that a judicious course or system was pursued in the handling of his horses ; and ever know it would be to his interest to do so ; for he would save himself the expense of many repairs, and often the price of a valuable horse.

MARKS OF AGE.

The general appearance and shape of the teeth constitute one of the most reliable means of determining the age of the horse, and with other circumstances which the experienced horseman can always ascertain full particulars, if it be possible to do so, form a quite accurate mark of age, until the animal is passed his

prime. The names of the three kinds of teeth found in the horse's mouth are the molars, or jaw teeth, the incisors, or front teeth, the canine, or tushes. When the colt is foaled, or within two or three days afterward, it shows two grinders on each side above and below, making eight altogether. At about twelve days old it will show four front teeth or nippers, two above and two below, and at the age of one month four more nippers will appear by the side of the first four. The third pair of nippers, or corner teeth, will appear in the mouth at eight months old. At the age of one year, the central and second pair of nippers are worn down nearly level, and the corner teeth are becoming worn down. At two years old, the marks or kernel, in the middle of the crown of the tooth is quite worn from all the front teeth. About this time, begins the shedding of the milk teeth, to make room for others more firm and durable. This process begins with first grinders. Between the third and fourth year the central nippers are shed, and their places supplied with others; and in the fourth year the same changes take place with the second four nippers; and at the

beginning of the fifth year, the tushes, or bridle teeth, as they are often called, make their appearance. After this the mouth is said to be full. The horse, at six years old, will have the kernels of the nippers of the lower jaw quite worn out, and the tushes by this time will have attained their full growth. The horse, at seven years of age, has worn out the kernels of the second pair of nippers in the lower jaw. By this time a hook has been formed on the corner teeth of the upper jaw, and the tushes plainly show the effects of wear. The kernel is worn away from all the nippers of the lower, and is growing less conspicuous in the central pair of the upper jaw, at eight years old, and during the ninth year, the kernel of the central pair of nippers of the upper jaw, is wholly obliterated; the hook on the corner teeth becomes more conspicuous, and they are worn dull and blunt. During the tenth year, the kernels of the second pair of nippers of the upper jaw, will disappear, and from the corner teeth during the eleventh year. At twelve years old the teeth of the lower jaw have become triangular, and the tushes much worn down. As the horse advances in

age, the teeth take on a long narrow shape, the gums will shrink away from them, and grow down between the teeth.

The teeth of the horse until he is eight or nine years old is, perhaps, the best means of telling his age, but after that time the best judges are often deceived. Some teeth show age and wear much earlier than others. The feed has much to do with the teeth. The horse that has spent his time, mostly, in the stable, and has been fed from the trough, has not worn down his teeth as the horse that has been on the pastures on sandy lands, or that has spent much of his time on the commons or in canebrakes. Some horses exhibit but little change in the teeth after they are nine years old; some have been judged to be only seven or eight when they were in the teens. Some horses never have hooks to their corner teeth. The teeth of the old horse are never so clear and white as they are in the young, because the teeth lose their enamel as the horse advances in age. The horse that suffers from sour stomach will have foul teeth. The teeth are a much better criterion to judge the age in some breeds of horses than in others. The

stock of horses that is long-lived will not show their age by their teeth so soon as those that are short-lived. The compact and well-developed will not show the marks of age so early as the tall bony horse.

The Texas pony, which we have not tried to improve by cross-breeding, are much longer-lived, are hardier, and live to three times the age of our stable-fed horses. His teeth, like his vital energies, hold out much longer. The tushes are exposed to but little wear; the friction caused by the feed passing over them is about all there is to wear them, and from the bit occasionally striking them, and their alteration of form, although as we have described it is frequently uncertain. The tush will sometimes be dull and blunt at eight or nine, and in another horse will be sharp at a very great age. The upper tushes are the latest to appear in the mouth and are the soonest to be worn away.

There are other circumstances which will enable us to guess at the horse's age with considerable accuracy until he is very old. At eight years old the upper surface of the nippers are oval, but as the horse advances in age,

the teeth diminish in size; this change commences in their width and not in their thickness. They become a little apart, and their surface is oval and round. At nine the central nippers are plainly so. At ten the others begin to have this oval shortness. At eleven the second pair of nippers are rounded, and at thirteen the corner ones have that appearance. At fourteen the face of the central nippers become triangular. At seventeen they are all triangular. At nineteen the angle begins to wear off and the central again oval. We do not claim perfect accuracy in the above marks of age, or that they appear the same on every horse's teeth, although they are recognized by horsemen generally as being tolerably correct. The curb-bit or stump-sucker, as they are commonly called, wear off their upper front teeth very early. At nine years of age the bars of the mouth will begin to diminish, and will continue to do so as he advances in years. At twelve the lower nippers change their upright position and project forward, and change to yellow color.

There are other marks of age that will assist the horseman in determining the age of

the horse, or at least they are distinctive marks of old age. Much may be learned of the age from the skin, the lips, chin, hair, and eyes. The hair over the eyes and upon the face and forehead of many horses turn gray, generally commencing to gray at from ten to twelve years old, and increasing each successive year, and at fifteen has become a distinct mark of age. After the gray horse has passed his fifteenth or sixteenth year, he will often become speckled with little black spots, he is then called flea-bitten. This change is said to not take place until the animal is at least twelve years of age, which is generally correct but not always so. The lips do not afford a precise index of any particular age, but after eight or nine the upper lips will sometimes shorten and contract, while the under one will lengthen and drop down, and as he advances in age the lips will wrinkle. Between the eighth and twelfth year the lower jaw-bone near the chin becomes sharp, and increases in sharpness as the horse advances in years. The skin on the lower jaw-bone shrinks away and instead of the roundness and fullness that is present with the young horse there now seems

hollowness or depression, and the outer edges or angles of the jaw-bones will curve or bend outward more and more. The eyes in advanced age lose their brilliancy, the ball flattens and the hollows over them deeper, wrinkles make their appearance on the under lids at an early age. By many these are considered as correct a criterion by which to determine the age of the horse as by the teeth. It is claimed by some that these make their appearance at three years of age; and all that is necessary to determine the age of the horse is to count the wrinkles, adding three to the number of the wrinkles. We do not vouch for the absolute correctness of the above method, yet one thing is certainly true, that numerous wrinkles are a mark of old age. The skin of the young horse is lively and pliant, while that of the old is the reverse. If the skin on the neck or jaws of the young horse is picked up with the finger and thumb, and is pulled out from the horse and held for a short time and then released, it at once resumes its place; but when the horse is old it will be slow to resume, and will stand puckered up. This rule will never deceive.

ABUSE OF THE HORSE.

It is truly astonishing what a lack of mercy and how much brutality there is in the world, and how utterly devoid some persons are of the commonest instincts of humanity in their treatment to the animal creation. How little regard is paid to the lessons of the divine word, which inculcates the beautiful virtue of mercy.

The injury the horse sustains by abuse and maltreatment depreciates his value, in many instances fully one half, in the present generation, and is the cause of many in the next generation. This is one of the great hindrances that retard the improvement of the horse in our country, in many farming communities. It is seldom that the mare or the young colt, receive the care and treatment that is essential to health, or such as is conducive to the best interest of the owner. The great amount of debility, suffering, and disease occasioned by the ill usage of the horse, in all its forms, is greater than can be expressed in words.

A large per cent of the ailments which befall the horse, in our own civilized country, is due to neglect and brutal treatment which he receives at the hands of man. There are many fine colts that are ruined or materially injured by mistreatment of the dam, or perhaps both. How many good horses has every observant person seen thrown into a bad condition by the same agencies, from which they slowly or perhaps never recovered. Many a scrub colt would have been foaled plump, healthy, and strong if the mother had been properly treated for some months before. Had the evil gone no further than the animal that had become the victim of such abuse, we could forbear our words of disapproval, but such is not the case; we see it, often, carried into future generations. If the mother is badly abused during gestation, she will bring her offspring into the world feeble and poorly developed, and can hardly be brought up by any subsequent treatment to the standard of his race. The stock, instead of being improved, is thus actually thrown back; and it may require years or generations to reclaim the injury.

The reader's attention is here called to some of the common abuses of the horse :

OVERWORKING.

It is remarkably strange how little attention is given by many horsemen to the distribution of their horse's labor. It is, too, often the case that horses are unequally paired off. The young and tender horse is placed by the side of the strong and vigorous one in the plow or wagon, and is expected to perform his labor without intermission from morning until night, or the weak and feeble horse is placed beside the strong and healthy one and no allowances made for the feeble animal, but is driven on till his strength is exhausted, and then he is often whipped because he can no longer go. If he had been paired with one of equal power and endurance and only been required to bear a reasonable burden, he would have performed his duty with cheerfulness ; but often there is no account taken of the load to be moved, or of the ground or the road to be passed over ; and often the poor and submissive animal has tugged at his load until his breath and strength are gone ; he is urged

on by the whip until he is, from exhaustion, forced to rebel and refuses to straighten his traces. By this maltreatment many valuable horses are balked and ruined for life, if not killed outright. Nor should the spirited horse be placed by the side of the slow one. Great care and judgment should be exercised in selecting horses of the same capacity and with equal nerve and spirit when they are to be worked together. We sometimes see spirited and nervous horses placed beside a slow and clumsy one, and as a result the spirited horse refuses to work, when if he had been paired equally, this would have been obviated.

Young horses are often put to work while too young, before the bones are hardened, or developed and the joints sufficiently strong. In this condition the animal is not able to bear severe and constant labor; and when it is exacted of him, the least injury that may be expected will be enlarged joints and limbs, the remainder of his life. The young horse should be exercised very early in life, but should not be put to constant labor until he is at least four years old. The overworking of mares, while in foal, is an outrage to human-

ity; for two lives are here endangered instead of one. Great care should be taken in putting the horse to hard labor after he has been allowed to stand idle in the stable for weeks or months. We have treated quite a number of horses for sweeney and stifle, which, we are sure, originated from lack of proper exercise, after having been kept in the stable without exercise during the long winter months. In the spring he is put to the plow, and after a few days, hard labor he is found lame. We will find the horse like man to some extent. Who of us have not felt the effects of some violent labor or exercise when we were not accustomed to it?

WHIPPING.

Many persons seem to take pleasure in torturing dumb animals, and have formed the habit of expending upon them some of their cruelty, of which their ugly nature is full. The poor horse has enough to endure in his daily labor and drudgery without being made the victim of the abuse of an unfeeling driver. It is astonishing how much thoughtlessness, and often purposed wickedness, there is ex-

hibited in his maltreatment. Some men are so ill-natured and cross that they will vent their spite upon the dumb brute if any thing goes wrong in their business affairs; while there are others of smoother disposition and better nature know no other way of conquering the irritable and restless horse than by whipping him. This is for lack of better judgment. We have witnessed some extreme cruelties, such as beating and lashing the poor horse, which was enough to make the blood run chill in the veins of any good man. Such scenes are of daily occurrence. They happen by thousands annually. Such abuses leave their effects behind for months, and often for years. Horses are often killed by a single blow upon some vital organ. In chastising mares with foal some men have so little sense of feeling as to kick her about the belly. If she is not killed outright herself the foal often is.

SLITTING THE EARS.

This cruel and useless practice, we are proud to say, has almost gone out of use. Only a few years past since it was common to find nearly

all the small ponies with their ears slit. The excuse for this was that it improved their appearance. We must condemn this practice, for while it not only disfigures instead of improving his appearance, it robs him of one of nature's endowments. Nature has given him these organs for the protection of the internal parts of the ear. The internal parts of the ear should be protected by all the protection that nature gave it, as it performs a most important office in catching the undulations of sound which produces the sense of hearing. To rob any dumb animal of its ears impairs the hearing and causes unnecessary pain. The ears of the horse are one of his chief ornaments, and by them we can determine, to no small degree, his temperament; when they are pitched forward he manifests surprise; when they are drawn backward they indicate danger or mischief; when they are raised and their movements are forward and backward, it manifests kindness and docility. When they droop from right and left it indicates old age. The natural play of the horse's ears are both instructive and attractive.

NICKING AND DOCKING.

There are a few men found who are not satisfied unless every thing they possess differ from that of their neighbors. Even the divine Creator in his wisdom has failed to satisfy their vanity. Their morbid fancy can suggest important improvements upon the most perfect specimen of nature's handiwork. The wise Creator has not seen proper to create a race of dogs or pigs without ears, or a horse with a short mutilated tail, for their special benefit and gratification, and not being satisfied they proceed to improve, as they would call it, upon the appearance of the horse by nicking and docking his tail, and remedy a mistake they seem to think the Creator made in constructing the horse. Endeavoring to do this they inflict upon the horse the most shocking cruelties. First they deprive him of a portion of his tail, a member of the highest importance; after this the muscles are cut at different places to totally destroy them, and the use of the tail; after this his tail is drawn upward by a cord. The cord is then passed over a pulley, at the opposite end a weight is

attached, which stretches the inflamed member as much as the bones will bear. In this cruel and torturing condition he is compelled to stand for fifteen or twenty days.

Neither nicking nor docking is now practiced upon the horse, as it once was in our country, and we hope the practice will never be revived. The tail, ears, hair, and mane are natural ornaments, as well as necessities, and he should never be robbed of them to satisfy a vain and inhuman fancy.

GENTLING AND TRAINING.

In many cases professional stock raisers do not so much as superintend the feeding and salting their own horses, much less the handling and gentling. By reason of this negligence, which is of utmost importance, much harm is done the colt, especially if left in the care of employed assistants who do not, in many instances, know nor care for the welfare of his employer's interests. A colt in the care of such attendants is often abused in such a way as to cause it to be shy. Some persons take great pleasure in scaring the young colts, and by so doing often ruin them for life. Young

animals, like young children, once they get to believe in ghosts such impressions will follow them through life.

The best time for gentling the horse is during colthood, while it is yet following its dam. This period is generally passed over by the owner; his excuse is, "I am too busy to take the time to accomplish all that is necessary to be done for the young colt." At this period, while the dam is being worked and handled, the colt should receive his share of the handling and rubbing. It is remarkable how soon the youngster will fall in love with the one who shows him friendship. It is comparatively a rare thing to find a man who has taken pains to inform himself thoroughly concerning the best methods of gentling the young horse, and training him for the different uses. The common practice is to let the colt run unbroken until he is considered old and strong enough to perform labor; he is then harnessed and put by the side of some quiet horse until he is forced into submission. This is a dangerous course for any owner of a young horse to pursue. There is danger to the horse, compelled to work by the side of the unbroken one, and

it is unsafe for the driver, and often ends in serious injury to the colt; and it is not a successful method of training and gentling the colts.

But few colts can truthfully be said to be well broken in this way; the process is too rapid and abrupt. Thousands of horses are spoiled in breaking so they are unreliable under the saddle or in the harness, or can not be worked at all. A more judicious and better system must be adopted or these evils will continue to exist. The public do not seem to be educated to the level they should be, for the proper understanding of this subject; probably this is caused by a lack of information concerning it more than from any other cause.

It is to be deplored that there is such a considerable amount of reading matter that is accessible to the farmer and that he does not avail himself of it and its benefits. There is no work now published, known to the author, on this subject; yet we find in many agricultural papers columns devoted to the asking and answering veterinary questions. So far as the general management of the horse is concerned

there has been but little, if any improvement, nor will there be until some better source of information is attainable. In some sections a few interested and enterprising men have taken hold of the matter and have made some marked, and to themselves, creditable improvements; but such have not benefited the public to any great extent, nor will they until such improvements are published and placed in the hands of the horseman. If the loss to the whole country, in the aggregate, resulting from the inferior treatment of the young horse were summed up it would be astonishing. There are but few thorough trained horses for the saddle or harness; the fault lies in not beginning the work early enough. The colt may be trained, and as well as the child. Childhood is the most favorable time to train a child and we can not begin too early. This is equally true of the colt. The colt should be handled every day from the time he comes into the world until he is perfectly gentle and his timidity and shyness have vanished by frequently handling and petting. He will soon learn to love instead of fear his keeper. The colt that is permitted to run for some months

without handling, and has no other knowledge of his owner but as an enemy or a monster to be feared, will seldom, if ever, get over this feeling as long as he lives. It is at this early age that vices and bad tricks of mature horses are learned. Never let the colt know what fear is; be sure to hold him fast before strong enough to break away. There never should be a time when the colt does not recognize his keeper and the necessity for obedience; yet every attention bestowed upon him should be gentle and kind. He should never be whipped or frightened, for he will ever remember any ill treatment received at this period. The use of the whip on the mature horse is seldom profitable, and is never so with the young colt. When the work of educating the colt is neglected, no subsequent pains will likely make good the deficiency. The colt of three or four years old, unbroken, is like the youth who has never known parental training. The history of such horses are, "Shying, kicking, backing, breaking the halter, and running away." The owner does, indeed, pay dearly for his neglect in the training of his young animals. The colt must be kept from the habits and vices

which curse and ruin him, or if they are contracted he must be broken now in his tender age. Now is the only time that these bad habits can be corrected. The man who has not learned that the horse is a creature of habits has not learned his lessons well. Bad habits must be prevented or broken, and an ounce of prevention is worth a pound of cure. It is much easier and better to keep the young colt from acquiring these bad habits than it is to break them after they are once learned. Every farmer should be able to determine to what each colt is adapted; and what place he can best fill; and so soon as the decision is made he should set to work, and conduct the whole process of training with a view to this special purpose. All this can be done at a very early age, much earlier than later. It may be laid down as a rule "that the colt is susceptible of training for whatever service is required of him, and that no failure would occur if he is peculiarly adapted to the work assigned him." Man can mold and fashion his disposition, and control his actions, and learn the young horse obedience and submission, and accustomed to the performance of whatever duty

is required of him. He will be true, safe, and entirely free from vice in almost every instance. The process of gentling should be carried on as often as opportunity affords, by handling his head and rubbing his neck and body, and by lifting his feet from the ground. This should all be done before weaning time, while the colt is with the dam. The halter should be occasionally placed on him, and as he grows gentler he should be led around. It is best not to try to teach him too much at one time. When he is at first led by the halter it should be done by the side of his dam. He should not be hitched by the halter until he has become well acquainted to it, and not then unless it be to a swinging limb of a tree. Be kind to him, but at the same time let him know that you are his master; he must be made to know that you are the teacher and he the pupil. He must not be allowed to pull loose or break away, for one time of the latter occurrence may almost ruin him, or it may take months of careful management to correct this one evil. It is often the commencement of a series of bad habits. As he becomes familiarized to the halter he should be left to himself for a short while.

The best way to accustom him to the saddle is to select a small one, which should be laid on his back gently and then removed. This should be repeated several times before it is fastened with the girth. A blanket may be used instead of a saddle if more convenient. The work of gentling is never well done until all fear of man has been removed, and he will allow himself freedom. When this is accomplished the task of taming is an easy and pleasant one, and his future usefulness is assured.

The many failures that attend the breaking are generally the result of harsh and bad treatment. Hence the necessity of employing such help and methods of handling the colt as will make it a success. The colt should be kept gentle and familiar with the halter. He should be led about every few days until he arrives at a proper age to be put to service, which should always be light at first. This should be commenced by tying the colt by the side of a gentle horse in the shafts, and leading them together on the road for some time. After he has become sufficiently acquainted with the noise of the wheels, the two may be urged to

a faster gait until they come to a trot. He will soon learn there is no danger, and will quietly submit to all that is required of him. He should next be taught the use of the lines, the weight and pressure of the harness. After this he can change places with the old horse, first by lifting the shafts, and then lowering by his sides, until he is made familiar with them; then he may be hitched to the vehicle and driven along by the side of the old horse. After the colt has been sufficiently disciplined in this way, and has learned to pull the vehicle, the old horse may then be led in advance of him, lengthening the distance, until after a time he may be carried out of sight and the colt driven entirely alone. All these performances are designed to accustom the colt to the bridle, the harness, and the shafts before he is strong enough to resist them. As he advances in age and strength his exercises should be increased, but should never be overworked. While young let his drives in the buggy be short but often repeated.

When the colt arrives at a proper age to train for the saddle a small boy may be gently placed on his back, and after sitting there a

few minutes should be lifted off. This operation should be repeated several times before he is ridden around. A sudden jumping on the back might excite the colt and do him a permanent injury, for the bone of the back has not the strength and solidity of the older horse. It is much to be regretted that farmers who own colts do not appreciate the importance of gentling and breaking them during the susceptible years of colthood. Such is the case with a great per cent of the farmers of the United States. The value of the horse depends a great deal more upon this than breeders are aware.

If the colt is allowed to run without breaking until he is three or four years old he will be wild and vicious. Such a horse will seldom ever be reliable and quiet. From a former age has been handed down to us a rough, dangerous, and unsuccessful method of breaking the horse—that of thrusting the wild colt by the side of the strong horse, hitched to the wagon, and thereby forcing him to submission. However, more rational modes are taking their places, among them are the following:

Conquer the animal by depriving him of the

use of his limbs, and making him feel that he is utterly powerless in the hands of the operator, and must submit to whatever is required of him. In other words, it carries the unbroken horse or colt through a rapid and vigorous course of training, which is both systematic and severe, and embraces in a short space of time all the essential lessons that are to be taught him—all that has been neglected in a previous lifetime. As a means of taming wild and vicious horses it is beyond question the best method known, and its easy, rapid, and almost invariable success renders it a most important step forward in the science of horse-breaking.

No person who thoroughly understands it would now think of going back to any of the old practices.

The first step, of course, is to halter the animal, which is by no means an easy matter to do in any case. To effect this purpose we have sometimes resorted to certain drugs, with following directions: Rub a little of the oil of cummin upon your hands, and approach the horse on the windward side so that he will smell the cummin. The horse will permit

you to come up to him without any trouble. Rub your hand gently over the nose, so as to get a little of the oil on it, and you can lead him anywhere. Put eight drops of the oil of rhodium into a silver thimble, very gently open the horse's mouth, and turn the oil in the thimble upon his tongue, and he will follow you like a pet dog, and is your pupil and your friend.

The use of any sort of drugs or essences in connection with horse-training is of doubtful propriety in any case, yet is, perhaps, admissible when you wish to catch a brute that is otherwise unapproachable.

It may well be questioned whether such agencies do not prove injurious to the horse; and even if this be not so, their good effects are of too transient a nature to endow them with any great value.

The owner should beware of confiding too much in these supposed benefits, or he may suddenly get in danger of his vicious animal. After the horse is bridled, the next step is to throw him upon his side, which may be done quite easily and without any work by means of two straps. The first of these should be a

strong strap of thick leather, two feet long, and at least an inch in width.

The end without the buckle should be fastened to the buckle, about twenty inches from the latter. The left foot is lifted up to the body, by an assistant meanwhile managing the bridle, and the strap is slipped over the knee, and pushed up over the lower pastern joint over the ankle and close to the body of the arm, or if the strap is furnished with a large loop, it will be necessary to lift the leg first and then buckle the strap. The animal now stands on three legs, and is utterly incapable of doing any mischief, unless it be with his teeth. Let him remain thus for five or ten minutes. If the new strap does not hold the foot pretty close to the body, draw the buckle a little tighter.

If he springs and jumps about let him have bridle room, and satisfy himself that he is securely fastened, and can not get his foot down. The second strap should be six feet long, and furnished with an inch and a half ring at one end, securely sewed fast. When used with a surcingle, which I have practiced, it need not be so long, and in any case a good,

stout leather loop will be better than an iron ring. The strap is to be moved around the ankles of the right forefoot, the end extending over the animal's shoulder, and held firmly in the right hand of the operator, who stands abreast the left shoulder, and jerks up the right forefoot, when the horse of course falls upon his knees.

Here he must remain if the assistant who manages the bridle does his duty, and the operator himself keeps the strap around the right foot, and drawn tightly over the top of the shoulders. He may struggle violently, and try to get up from his kneeling posture, but by keeping his head down and his right foot well up he will soon grow tired of this, and before long show a disposition to lie down. The operator should encourage him to do so by soothing words, and with one hand in the mangle, try to pull him over to the left side, while with the other hand he should be rubbed and caressed.

The assistant, holding the bridle, should turn the head toward the right side to facilitate the movement, and to compel him to fall when he finally concludes to do so, upon the

left side, so that his back will be toward the operator. His struggles may now begin again, but if his head is held firmly to the ground, and his left foot firmly kept back, he will soon give over. We have described those operations as the work of two men, because in this way the process becomes so simple and easy that no intelligent farmer or farm hand, of ordinary strength and activity, need be afraid to subject his powers to the experimental test of this method. But in my own practice, and no assistant was allowed the operator, a limitation which was compensated in a slight degree, however, by the addition of a surcingle, buckled on, passing the leg strap under the belly. It is grasped by the right hand, well gloved, just back of the surcingle, while the left hand manages the bridle reins.

The horse is urged to move a little, which he can only do by hopping, when suddenly the left leg is drawn up to the surcingle, and there kept. At this he falls to his knees, of course, but if possessed of any spirit he will soon begin bounding into the air upon his hind legs; then the operator must be active and on the alert, using both hands as above directed,

to the best possible advantage, and never getting so far forward as to expose himself to the danger of being caught under the horse when he falls upon his knees. Sooner or later the animal will become exhausted, whether he resists by violent plunges, or sulkily remains on his knees, and when this takes place he will be glad to lie down of his own accord.

The right rein must be kept tight, so as to keep his head turned away toward the off-side, and, if need be, the operator may use the further argument of a little pressure, exerted to pull the horse toward himself. A man of nerve and activity, especially after he has had a little experience, is likely to prefer carrying the process through without the aid of an assistant.

Once subdued by these means, and lying on his side, the horse will be indisposed to get up for the present, and now comes the golden opportunity for profiting that is passed. The animal must be treated with the utmost gentleness, and every effort made to quiet his fears and soothe his terrible excitement, which often causes him to tremble exceedingly. He must be convinced that, although completely

mastered, he is in no way to be hurt. Confidence must replace terror, and docility his stubborn or vicious waywardness. Let the operator stroke his hair with his hand, pat him on his body, neck, and head, handle his feet, legs, and ears, and in fact all parts of his body, accompanying all this with kind and reassuring words. The man may sit down upon him, turn around from side to side, lie down upon him, etc.

The saddle should be brought and gently laid upon him, the stirrups hanging on each side of his body; likewise all parts of the harness, piece by piece, and the chains, if they are to be used, laid across the prostrate form. After these maneuvers have been carried forward for half an hour, and all signs of fear have departed, the straps and surcingle, if one has been employed, may be removed, the head liberated, and the horse encouraged to rise to his feet. Many persons make the animal undergoing this process lie down in this way a number of times, until they readily submit to the operation, and fall first upon their knees and then upon their sides, almost at the word of command, and until the last vestiges of fear

of saddle, harness, chains, or shafts have vanished. It is astonishing how quickly this will follow when once the horse is conquered. He may be taught obedience in almost every particular. But this requires close attention and great patience, and sometimes the work of breaking is not completed short of some days. Some persons bring the buggy and lay the shafts on the horse while he is down, and let the wheels pass around near his body. After he is on his feet again the saddle may be brought and laid carefully upon his back. If he submits to this, well; if not, he must be taken through another course of exercise on his side, and this must be continued until he is willing to allow not only the saddle to be put on him, but every portion of the harness as well. Only one piece of the gearing should be tried on him at a time, and if he scares or jumps at any of these, remove them and lay them down again, and take him through another course of exercise.

The first time that he is ridden it should be in the stable, where he has been laid on his side, and here he may be mounted by some lad just as he has risen to his feet, and led

around the stable several times with the young rider upon his bare back. This operation must be frequently repeated, until he becomes accustomed to his burden. He should not be hitched up in the shafts until he has become perfectly familiar with them, and all traces of fear have disappeared. He may be prepared for hitching up by being led into the shafts frequently, when they may be lifted up by his side, raised up and down, etc., until he is satisfied they will not harm him. If he jumps about and shows any timidity, continue the lesson until he submits, and will permit the shafts to be laid upon his back or neck, or by his side. If he is obstinately fractious or scary, lock up his forefeet, etc., again. Under such discipline he can not long hold out. Whatever you undertake to teach him, persevere in the instruction until you succeed. If the horse has been thoroughly worn out and conquered at the outset, there will not be much trouble subsequently, but unless that has been done it will be a somewhat prolonged course before he is brought under proper subjection. But always remain kind and firm. Allow no harsh words or measures of any

kind. Let all your handling of him be gentle and soothing, remembering that the law of kindness is always more potent than that of force. After the harness has been put on an assistant may go behind him, taking the traces in his hands, pull back, so that a gentle pressure will be brought to bear upon his shoulders, and when he has kindly submitted to this he may be hitched up in the buggy and gently started off.

Another plan besides that here indicated for familiarizing him with the shafts is the method laid down in a preceding section of this chapter for the training of the young horse, namely, to hitch him by the side of another very gentle horse, harnessed in the buggy, and with their heads tied quite close together to drive them around, until the unbroken one will lead kindly beside the other. When this is accomplished the two may change places and the exercise resumed as before.

Still another mode which is in practice to some extent is to hitch the unbroken horse in a cart, and put in a very strong though gentle horse before him, the two forming a "tandem." The management of the hinder one, by either

leading or driving, will be work enough for one person. After a time the forward one may be unhitched and led in advance of the young horse, the distance being gradually increased, until the young horse finds he can go alone; then the old horse may be taken off the field entirely.

When the process of breaking is commenced it should be pursued vigorously every day until the wild horse is thoroughly and completely broken, and when put in the shafts he should be driven freely. With such an animal, energetic measures are necessary to teach him that you are his master, and that he must submit to your control. Do not begin the task of breaking him until you have the harness and every thing else you expect to use ready at hand and strong, and then keep him going until he is conquered, broken, and trained.

Preparation of Medicines

RECOMMENDED IN THIS WORK.

The medicines discovered and recommended in connection with the diseases described are few and familiar, yet are of inestimable value, singly or combined, and have proven by experience to be efficacious. The manner of preparation and use should be faithfully carried out.

THE PENETRATING LINIMENT.

To twelve ounces of spirits of turpentine add one ounce of finely pulverized corrosive sublimate and one ounce of gum of camphor, after which it will be ready for use.

This liniment is very poisonous if taken internally, but will do no harm to the hands if it should come in contact with them. It is one of the best liniments ever compounded, and will reach the seat of the disease through all obstacles. It will cure more diseases of the horse than any and all other liniments

combined which has ever come under our notice.

It destroys proud flesh and heals ulcerated sores and all bone and skin diseases of the horse. It will effectually cure scratches, thrush, grease, foot-evil, big head and big jaw, ring-bone, navicular disease, and spavin, if applied in time. It has been used by the human subject with decided benefit for rheumatism, but it is positively dangerous to rub on the human skin. There is great danger of salivating by external application. This liniment will not lose its strength, but will improve by keeping. Special directions are given in connection with the disease for which it is recommended—how to proceed in its use. It will blister the skin of the horse, and cause the hair and scarf-skin to fall off, but will not destroy the true skin if its use be followed with grease.

MAY-APPLE SALVE.

Take about two gallons of the May-apple roots, and boil them in water until a thick syrup is obtained, carefully stirring all the time to prevent its burning, and while boiling add as much lard or bacon grease as there is syrup. After the grease and syrup are thor-

oughly mixed, remove from the fire, and it is ready for use.

This salve is used for tumor where matter is formed; also in poll-evil and fistula in their last stage, where pus has formed. It is slow in its action but sure in its effects when properly used. It will draw all the fever and inflammation to the surface. After three or four days little pustules will form all over the surface of the affected parts, from which will escape the pus or matter. When this crisis is reached the patient is safe; the cure is only a question of time. The animal's head must be confined while the salve is being used. It gives pain for the first three or four applications, but when the matter begins to escape the patient will become quiet.

RENOVATING POWDERS.

Take equal parts of finely pulverized rosin, sulphur, and Jimson seed, ground fine. Mix them all together, and the preparation is complete.

This powder is used in all skin and blood diseases of the horse. Big head and big jaw can not be successfully cured without it. For all kidney and urinary diseases this powder can

not be surpassed. For hide-bound and stiff complaint it meets the requirements in every particular, loosening the skin, opening the pores, and at the same time purifying the blood.

CAMPHORATED COAL OIL.

Take any quantity of coal oil desired and place it in a bottle or other vessel, and add to it as much of the gum of camphor as the oil will dissolve, and the preparation is ready.

This liniment is used on the throat for all throat troubles, coughs, colds, distemper, laryngitis, and on the legs and feet in case of scratches. This liniment will be found to be of inestimable value to the human subject, especially for children, in case of croup and whooping cough. In case of croup a flannel cloth should be well saturated with the liniment and applied to the chest, extending up to the neck and throat of the patient.

CAUSTIC POTASH.

Take one ounce of caustic potash, to which add enough water to dissolve it, and with a feather, or small rag mop, touch the wart with the liquid in the morning, wash it off at night,

and then grease the affected parts. Next morning wash off the grease and apply the potash again. The liquid should not be used too freely, so as to allow it to run down on the sound flesh. To avoid this trouble grease well below the wart before the liquid is applied.

SULPHUR OINTMENT.

Take one ounce of red precipitate, one ounce of sulphur, and five ounces of lard, and thoroughly mix them together.

This ointment is used to destroy vermin. For this purpose apply once each day for three or four days, rubbing it into the hair all over the horse's body, neck, and legs. Just as little should be used as will answer the purpose, but the hair should be rubbed thoroughly.

NERVE LINIMENT.

Take one and a half ounces of hartshorn, one and a half ounces sulphuric ether, one ounce spirits turpentine, one half ounce of sweet oil, one half ounce of oil of cloves, one ounce of chloroform. Mix them all together.

This liniment is used in all throat troubles and for cramps or contractions of the muscles; also to rub over the region of the kidneys in

all urinary affections. It will cure headache and toothache in the human subject quicker than any other known remedy, and for this reason should be kept in every family.

EYE-WASH.

Take four fresh hen eggs, break them into one quart of pure rain water. While it is cool mix, stir until thoroughly mixed. Put this into a clean kettle, and place it on a fire, bringing it gradually to a boiling heat, stirring all the time. After it has boiled a few minutes add one half ounce of sulphate of zinc, and remove from the fire. After it has stood a few hours the eggs will settle to the bottom, after which strain out the sediment, and bottle for use. Keep in a cool place in summer, and where it will not freeze in winter.

This eye-water will cure hooks and other inflammation of the horse's eye, and when diluted with one half water will cure sore eyes in the human subject in almost every case.

DISTEMPER MIXTURE.

Take two table-spoonfuls of gunpowder, two of pine tar, one of soft soap, one of gum of myrrh, finely pulverized, and two of lard.

Mix all together. Give one or two table-spoonfuls at a dose by placing it on the root of the tongue with a paddle. By this means it will reach the throat and stimulate the glands, which is very important in all throat troubles, as coughs, colds, and distemper.

IODIDE MERCURY OINTMENT.

Take of iodide mercury one ounce, and five ounces of hog's lard; thoroughly mix together.

This ointment is used for ring-bone, spavin, and wind-galls, and for all bone enlargements, and can be substituted for the Penetrating Liniment in cases of big head and big jaw, but should never be applied so frequently. Once every five days is usually often enough to apply this ointment, and should be followed with grease about the second or third.

LINSEED-SEED OIL.

Linseed oil given raw in half pint doses, one dose each day for two days, will improve the condition of the bowels if constipated, and if the oil is followed with daily doses of one teaspoonful of black antimony it will improve the skin and hair, giving it a healthy and glossy appearance.

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