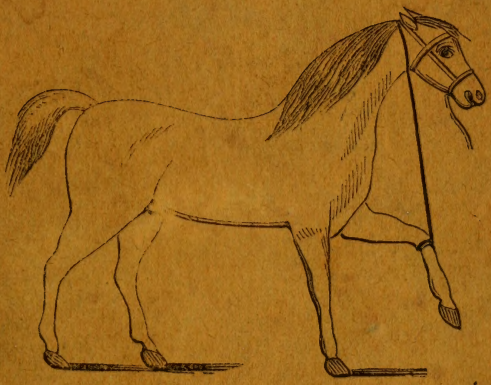
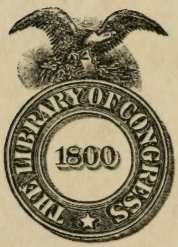
EVERY MAN
HIS OWN
FARRIER.



Plain and practical directions in the choice, how to buy and how to keep a horse, together with remedies for all diseases to which he is liable.

PHILADELPHIA:
W. A. LEARY, JR.,
No. 8½ South Delaware Avenue, below Market Street.
1867.



THE

AMERICAN FARRIER

AND

HORSEMAN'S COMPANION.

BY S. R. HAYNES.

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1865.

PREFACE.

No animal is so useful as the horse, and yet there is none so liable to disease. To-day, he may be apparently well; to-morrow, he is stricken with violent pain, which, if not speedily attended to, ends in death.

But very few persons who own horses understand anything of their nature, or of the remedies necessary in case of sickness. The author, having had long and successful experience with horses, and having been urged by many friends to publish the recipes of the remedies by which he has performed some wonderful cures, has consented to offer the following as a complete "Horse Doctor" on the treatment of the "thousand and one ills which the horse is heir to," and also the proper mode of treatment while sick.

If the readers of the work are only as successful in following the instructions, as the author has been during his twenty years' practice, he feels that he offers sufficient apology for intruding upon the public notice.

Philadelphia, January 20, 1865.

THE

AMERICAN FARRIER.

THE PULSE.

The most convenient place to feel the pulse is about four inches below where the throat latch is buckled, on the lower jaw. Some horsemen feel for it at the side, but although they can count it there, they cannot tell its quality; beneath the jaw, it can be pressed against the jaw bone, and the quality as well as quantity can be easily ascertained.

As the pulse is of great assistance to a physician, particularly in treating a child, who cannot describe its pains, so, to the veterinary surgeon, it is an invaluable assistant.

The number of pulsations in any artery show the condition of the heart and of the rest of the body. In a healthy working horse, the pulse is about thirty-six to the minute; but in a thorough bred, or smaller horse, it is forty or forty-two. This is the standard pulse. When the pulse is fifty or fifty-five, there is some fever, and he needs attention;

at seventy or seventy-five, he is in a dangerous state, and a pulse of one hundred or more would wear him out in one or two days.

But great care should be taken not to excite the horse, when about to feel the pulse. If you approach him hastily or speak roughly, it will affect him as it would a sick person. It will excite him, and his pulse will quicken ten beats per minute. Even when approaching him quietly, and speaking gently, the pulse will be somewhat disturbed; and before leaving him, you should feel the pulse again, to note if there is any difference.

Where a quick pulse indicates fever and irritation, a slow pulse indicates diseases of an opposite character, where nervous energy is wanting. The hard pulse is a sure indicator of considerable fever, for the heart is excited to more violent as well as frequent action, it contracts more powerfully upon the blood, and drives it with greater force through the arteries, and the vessels are thus expanded violently and suddenly.

In the first stages of this, bleed in the neck vein, get as large a stream as you can, and keep the finger on the pulse; let it flow until the pulse is slower and more regular.

The hard, jerking, yet small pulse, denotes a very dangerous state of disease, and almost always accompanies inflammation of the bowels. The heart is so irritated, that it contracts before the ventricle is filled, so the stream is not great, though forcible.

In sudden cases of inflammation of the lungs, their minute vessels are obstructed by such an overflow or pressure of blood, that the action of the heart can hardly move the stream along, and then you find the oppressed pulse.

In bleeding, the finger should be held upon the pulse, and the quantity of blood taken be regulated by it.

CRIBBING.

This is a disease which has baffled nearly all who have attempted to explain it, even where they were skilled in most ailments of the horse. Some say it is caused by the teeth growing too close, and pressing so hard against each other as to cause pain, and the horse bites or cribs, to relieve the teeth ; but I ask you who use this argument, will it crib if you buckle a strap around the neck ? No ! Well, does this strap loosen the teeth, or ease them in any way ? Of course not : but still some say they have cured it by filing between the teeth. Yes ! but for how long ? they don't know ; they sell him while the teeth are yet sore, and it hurts him to touch anything with them. As soon as he is well he will crib again.

Some are called wind suckers, who do not bite the crib, but are said to suck the wind. Now, this is not so ; they are doing what the horse does when he is cribbing, simply belching—that is, in the first

stages of it. Instead of swallowing wind, (which he could not do, as wind drawn in goes to the lungs through the wind-pipe only,) he is belching up gas which has generated in the stomach. By putting the strap around the neck taut, he cannot use the muscles which he needs to gulph up the gas.

This explanation will bear any test that may be applied to it, and prove conclusively to all that my theory is correct.

One of the surest causes of cribbing is feeding with cut or chopped feed. It is usually fed too wet, which makes it foment, and generate gas. This distends the stomach, and causes pain or uneasiness; and to ease himself he learns to catch at the crib, holding upon that to belch forth the gas. Watch him, and you will see the same action as you will see in a man belching wind, as they say, or gas.

Some horses are almost filled with gas, bloated as if with colic; then it is dyspepsia.

To cure cribbing, you must stop the generation of this gas in the stomach. One way is to feed your meal dry; it is not as liable to hurt him in this way as when fed as in slops. You can just dampen the hay or straw, and the meal will adhere to it.

Take one pound of pulverized charcoal to one pound of soda; mix well together, and give one table-spoonful once a day, for a week, or until he is cured. He should be hitched so that he cannot bite anything for a few days, and be fed from the floor; then as the medicine and feed remove the cause of

the disease, a few days absence from anything he can bite, will remove the habit.

NICKING.

There are two different modes of nicking ; I will give the best and easiest. To make a horse carry an elegant tail is attended with some uncertainty. It much depends upon the spirit, disposition, form and vigor of the bone of the tail, &c., &c. A horse of good spirits, tolerable shape, and a small bone in the tail, can be made to carry an elegant tail with the greatest ease, particularly if he carries a tolerably natural tail; but a dull, leather-headed, flop-eared horse, with a remarkably large bone in his tail, will set you a task, although you may break the bone in two or three different places. Indeed, there is so much difference in horses, that some judgment must be exercised about the mode best to be adopted for the accomplishment of the object in view.

Nothing can more disfigure the appearance of a horse than to be half nicked. The form of the tail, when this unfortunately happens, departs from the simplicity of nature, and never attains the elegance of art.

I shall now proceed to the best method of nicking every description of horse, and which, if well attended to, will seldom or never fail to succeed.

The horse should be confined in stocks fitted for that purpose. The tail then should be plaited up and clubbed at the end, turned over a small stick, and securely tied with a string. Being provided with a knife made for that purpose, turn the tail up in a direct line with the back; commence the operation by making an incision about one inch from the rump, close to the hair; cut the cords in one place on each side, leaving an incision only the size of the knife-blade; be very careful not to touch the bone with the knife, for if so, it would create inflammation, and the hair would come out. Great pains should be taken to have the weights equal, in order to keep the tail in a perpendicular direction, and prevent it from turning to either side during the time of healing, as a horse that carries his tail to one side, instead of being elegantly nicked, is ruined.

The horse many times carries a crooked tail before he has been nicked. To straighten the tail, cut the top cord—the under cord depresses the tail and the top one raises it. When standing, the tail is straight; you will see at once that it is the top cord. In cutting the cord to straighten, cut the long cord, and the short cord will push the tail straight, and the long cord will pass by on a lap, and grow together, leaving the tail as strong as ever. Pulling is not required in straightening the tail.

STRENGTH OF FOOD USED FOR HORSES.

It will, perhaps, be interesting to the horseman and farrier to know how much nutritive matter is contained in the different kinds of food given the horse. The quantity cannot be considered as expressing the actual value of each, because other circumstances beside the simple quantity of nutriment seem to influence their effect in supporting the strength and condition of the horse. Yet many a useful hint may be learned when the farmer looks over the produce of his soil. The list is taken from Sir Humphrey Davy's Agricultural Chemistry:

1000 parts of wheat		contain	955	parts of	nutritive	matter.
" " barley		"	920	"	"	"
" " oats		"	743	"	"	"
" " peas		"	574	"	"	"
" " beans		"	570	"	"	"
" " potatoes		"	230	"	"	"
" " red beets		"	148	"	"	"
" " parsnips		"	99	"	"	"
" " carrots		"	98	"	"	"

Of the grasses, 1000 parts of the meadow catstail contains at the time of seeding, 98 parts of nutritive matter; narrow-leaved meadow grass in seed, and sweet-scented soft grass in flower, 95; narrow-leaved and flat-stalked meadow grass in flower, fertile meadow grass in seed, and talefescue in flower, 93; creeping soft grass in flower, 78; common turnips, 42; long-rooted clover, 39; white clover, 32; and lucerne, 23.

TO TELL A HORSE'S AGE BY HIS TEETH.

The only sure way of telling the age of a horse is by the teeth, and these only for a certain time; after which there is nothing to be depended on, although you may guess very near, by the front teeth of his upper jaw, until he is about twelve or thirteen: this, with the face of the horse, and some other marks, enables one experienced in horses to guess pretty correctly.

There are six teeth above, and six below in the fore part of the horse's mouth, from which we may judge of his age; they are called gatherers. When a colt is foaled, he has no teeth in the front of his mouth. In a few days, two come in the upper jaw, and two below. Again, in a few days, four more appear; but the corner teeth do not come for several months—three or four. These twelve teeth remain unchanged in the front of the colt's mouth, until he is two or two and a half years old, when he begins to change them for permanent ones; although the manner in which he has been fed, regulates, in a measure, the time of change.

Until he is in his eighth year, you can tell his age by the front teeth in the lower jaw,—so we will only speak of these. At first he sheds the two middle teeth of the six. These are succeeded by two permanent, or horse teeth, of a deeper color, and stronger—and grooved or fluted from top to bottom, with a black cavity in the centre. He is now about three. In the latter part of the fourth year, the

teeth on each side of the tooth in the centre undergo the same process, and he becomes possessed of four horse teeth in the middle, with their natural black marks in the centre, and one colt's tooth, only, on each side. He next sheds his corner teeth. When he has their successors, his mouth is full. He has the black mark now in all the six teeth, and is five years old.

After the horse is seventeen or eighteen, the grinders wear down, and the nippers prevent the grinders from coming together, so that he cannot masticate his food. By filing off the nippers, he will masticate his food as well as a six year old horse.

TO FEED, WATER, AND DRIVE.

Persons should be very careful not to feed and water heavy before driving. By filling the stomach with water and feed, the water destroys the juices of the stomach, and weakens digestion; the grain becomes swollen, and generates a gas which fills the stomach with wind, and as soon as it is diseased, the bot will work his head into the coating of the stomach. It also fills the bowels with wind, and would naturally cause colic. So you see at once, by overloading the stomach with food and water, and driving fast, it will cause disease; and many times, when the horse comes in, he is off his feed—will not eat. There is nothing to call for food; he

will drool at the mouth, and will not regain his appetite for twenty-four hours. All grain will digest best whilst the horse is standing still, and all feed that passes off without digestion, weakens the action of the stomach and bowels, and, in many cases, will scour the horse, and cause him to become weak. The less you feed before driving the better. Then, again, you should water very little on the road. Feed mostly at night; the food will then all digest and make flesh and blood. I should advise not more than two quarts in the morning, and the same at noon. I do not feed in the morning, neither do I water.

If I was going to make a long and fast drive, I should feed twelve quarts the night before; then my horse would be strong, and feel light and active, and do his work easy. By giving him little water, the horse will fully digest what he has eaten; but if you weaken the juices, of course you weaken digestion, and a horse should only be fed what he can easily digest. I think by so doing you will save one-third of the grain formerly given. Most of the diseases are caused by too much water and food; the water destroys the juices, and disables digestion. By feeding most of the grain whilst the horse is at rest, it will fully digest, leaving the horse strong, and able to do his work.

By giving a great amount of water, it diseases the blood, and deadens the hair. The water must pass in some way; it cannot all pass in the urine, and it

passes off through the pores of the skin, causing the hair to become gummed, and makes the horse very hard to clean. So much water passing off through the pores of the flesh, destroys the roots of the hair, and causes it to look dull and faded. Then, again, you should be cautious not to drive your horse into cold water when warm, or throw water on him; by so doing, it chills the blood in the veins, separates the blood from the watery substances that the blood forms from, and causes disease, the skin becoming full of small tumors, and the hair will fall off. By thus diseasing the blood, he will be liable to many other diseases. By avoiding to give too much water on the road, and too much food before driving, and keeping the horse warm after driving, you avoid disease.

INFLAMED EYES, OR HOOKS.

In the first place, rowel below the eyes and in the jaws; and if the eyes are much inflamed, bleed two gallons from the neck vein, and use the eye lotion as below, or any of the following recipes, every morning. Move the rowels every day, and let them remain in fifteen or eighteen days. If the eye should show a white speck in the centre, there is then no cure; the nerve is affected. But as long as the water runs from the eye or the eyelids swell, there is some hope. Weak eyes are most liable to be found in young horses. Sometimes the eye be-

comes weak from wolf-teeth. These should be knocked off; they will be found on the upper jaw.

Eye Wash No. 1.

Take one drachm of white vitrol; one quart of soft water; laudanum, one ounce; two drachms of sugar of lead. Wash the eyes well every morning, after washing them well with cold water, and repeat it for three or four weeks; and, if no better, bleed and give a mild physic. Keep the horse on low diet, and do not work too hard or over-heat. Oats and scalded bran are good.

Eye Wash No 2.

Take a half ounce of gum camphor; two ounces of spirits of ether; and a good quality of linseed oil, one pint. Let them stand in some warm place until the oil cuts the gum, and it is then fit for using. Apply to the eyes every morning with a soft feather. This is better in winter than No. 1.

Eye Wash No. 3.

Take one tablespoonful of alcohol; one teaspoonful extract of lead; one-half pint of rain water. Wash the eyes freely two or three times a day.

FISTULA, OR POLLEVIL,

Is caused by a bruise or stroke, and produces fever in the muscles. Try and cure it before it breaks.

Run a rowel or seton from the lower part of the swelling to the top, through the centre of the enlargement; then make the annexed lotion.

To cure it before breaking.

Four ounces of spirits of tar, four ounces linseed oil, half a pint spirits of turpentine, two ounces of sal ammoniac; mix them well, and then apply over the swelling every other day, and let the seton stay in until the swelling has entirely gone. Move it every day, and when all has disappeared, draw it out. Keep the part clean, and bleed when you first open.

To cure after it breaks.

If the pipes run down towards the surface, which you will discover by probing it, run a seton down through the bottom of the pipe, and anoint it with the following, until it runs a bloody matter:—Take one-half an ounce of cantharides, and four ounces of mercurial ointment. Then draw it out. If the pipes run down the centre of the shoulders, then run down a piece of nitrate of silver to the bottom. Keep the parts clean with soap and water, and use the following liquid every day, on the swelling.

Liquid for Pollevil, or Fistula.

Three ounces of arnica, or seneca oil, half ounce of origanum oil, half ounce of turpentine, six ounces of olive oil; mix well and apply after the nitrate of

silver has been used, every few days until the part affected heals up.

STIFF SHOULDERS, OR SWEENY.

This disease is on the side of the shoulder. The horse, while suffering, will be quite lame, and will stand with one foot before the other; and if it is on both shoulders, he will change them from one to the other. Where the horse has not been lame long enough to know how to ease himself by standing, as described, you can easily tell what the trouble is by pressing with the finger upon the muscle, which may be shrunk but a little, as at times they are apt to shrink much; yet when you press, he will shrink from the touch. I give below my remedy for this troublesome disease.

Rowel from the top of the shoulder-blade down as far as there is no feeling; cut through the skin first, and then two thin fibres or striffings. Use the blunt needle, move it backwards and forwards five or six inches, draw in a tape or seton, and the next morning wet it with the tincture of cantharides, or oil of turpentine, which must be done every day, and wash the part clean; the tape to stay in until the matter changes to blood; this is for both diseases. Let him run out if possible; if for sweeny, you can work all the time.

TENDER FEET, OR HOOF-BOUND.

This is caused by a fever in the feet, gravel or founder. The symptoms are hot feet, and a drawing in one inch from the top of the feet at the heels. Never rasp above the nail-holes, nor have the feet spread at the heels, for it will do the foot an injury. Use the following. Either the liquid or ointment may be used, and applied according to directions.

For hoof-bound, or tender feet, apply it around the top of the hoof, and an inch lower every other day; for split-hoof, it may be applied every day. Clean the cut or crack out well, and have a stiff shoe on the foot.

Hoof Ointment.

Take one pound of tallow, two ounces of verdigris, (powdered fine,) three ounces turpentine, six ounces beeswax, four ounces of rosin, and two pounds of lard; melt together, pour it into a pot and stir until it gets cool. This is one of the best ointments ever used for corks or bruises of the feet.

Hoof Liquid.

This liquid is one of the best for tender feet, or hoof-bound, that can be used. Take six ounces of oil of tar, three ounces of origanum, four ounces turpentine, half a pint of either linseed oil or neats-foot oil; shake up well and apply the same as the ointment. In cases where the horse has been lame long, it penetrates the hoof sooner than the oint-

ment. Apply in the evening so that the horse can work next day.

HOOFEVIL OR THRUSH.—GREASE HEELS.

This is caused by over feeding, and the want of exercise, or standing in a filthy stable. The symptoms are well known by a discharge of offensive matter from the frog of the foot, and around the top of the foot. If the frog should come out, you must put a stiff shoe on the foot to keep it from contracting.

First bleed and physic, and then poultice the foot with boiled turnips and some charcoal, (ground fine.) This must be followed up for two or three nights; then wash with castile soap and soft water, and apply the blue ointment every day, as directed below. The horse must be kept on a clean floor.

Blue Ointment, No. 1.

Third of an ounce of iodine, half an ounce of origanum, two pounds of mutton-tallow, two ounces of turpentine, quarter of an ounce of verdigris (ground fine), and four ounces of rosin; mix it well together. This is one of the best ointments made for scratches, hoofevil, or cuts; also good to apply on fistula, after taking out the rowels.

There is also another remedy which may be used, and will have very good effect. When the inflammation has been poulticed with carrots boiled soft

and mashed fine—or linseed meal may be used—there will be a healthy discharge of matter; and it may be dressed with the following

Ointment for Grease Heels, No. 2.

One ounce of rosin, two ounces of honey in the comb, two ounces of lard, and one ounce of calamus powder. This is cooling, and heals very fast. If the fungus is not entirely gone, wash with two drachms of blue vitriol and a pint of water.

Ointment No. 3.

For common scratches, this is known to be good. After washing with dish-water, and drying, apply as in the last, with copperas and chamber-lye.

LUNG FEVER.

This is often caused by removing from warm to cold stables, and too much water when warm. The horse is taken with a chill, and then breaks out in a cold, clammy sweat. He groans when he moves, and hangs down his head. He never offers to lie down; his ears and legs are cold.

Bleed from the neck-vein about three gallons. Take one ounce of aconite to half a gallon of cold water; drench with one gill every three hours. Blister over the lungs; then give water that hay has been boiled in. Add to each gallon one ounce of gum arabic, and half an ounce of spirits of nitre;

give every four hours. Rub the legs well with alcohol and camphor until they are warm, but do not let him be moved. If hot weather, keep him in an open stall.

Inhaling is often practiced, and is very essential to be done. Take one ounce of digitalis, one ounce of nitre, two ounces of balsam fir, and two ounces of copaiva; mix it well together with one pint of 95° spirits and one pint of hot rain water. Cover him over with blankets, so as not to let any air get to the horse. Then hold the mixture to his nose; at the same time put a hot iron into the compound, and let him inhale the fumes.

YELLOW WATER, OR DISEASES OF THE LIVER.

The eyes turn yellow and run; the bars of the mouth do the same; the mane and hair get loose, and the horse often gets lame in the right shoulder, and becomes very costive. In this case, it is necessary to give the following ball every morning, until it takes effect upon the bowels:—Take four drachms of ginger, one drachm of calomel, seven drachms of aloes, and molasses enough to make it into a ball; wrap it in a paper, and give it. Give scalded oats; or bran-grass is good, if it can be procured. When the bowels have been moved, then stop the physic, and give, in the morning, for ten days, in a pint of water, one ounce of spirits of camphor. Rowel in

the breast, and give a dose of cleansing powder for two or three days, composed as follows :—

Cleansing Powder.

This may be found good for coughs. It is used when the blood is out of order, and restores a lost appetite. It is also good for yellow water; and where it has been used, it is highly recommended. Take one pound of good ginger, half an ounce of crude antimony, four ounces of powdered gentian, and one ounce of nitre; mix it well together, and give a large spoonful every day, in wet food, which will be found perfectly safe.

There might be a great many words said, and many recipes given for the diseases of the liver; but I have found the above as good as any, if not better; and it is not worth the room to give them, as it will leave space for something more valuable.

DISCHARGES FROM THE NOSE.—NASAL, OR GLEET.

This is caused by neglect in distemper, or over-heat, or cold. This is a white discharge from the nose. It is not contagious, and can be cured, if you use the following directions :—Stop working; take half a pound of blue vitrol, half a pound of rosin, half a pound of alum, and half a pound of ginger, which must be ground, and mixed well together. Give a large tablespoonful every morn-

ing and night; bleed one gallon, and keep him out of the wet. It is best to keep away from other horses.

DISEASED KIDNEYS

Is often caused by feeding dirty or musty grains, hard work, and over-loading; and very often by giving too much turpentine, besides various other causes, which are not worth mentioning. I have found this to be the only thing that would give relief, generally in two or three days. Blister over the kidneys, and give the following:—Two ounces of flour, one ounce of juniper berries ground fine, and one ounce of rosin; make all into a stiff paste, then make it into seven pills, and give one every night, and use the cleansing powders every day. If the horse has difficulty in rising, when he lies down, swing him up for two weeks; and be sure and give clean food, as it is half the cure. You must be careful not to keep him too warm; for if he sweats, the medicine, instead of stimulating the kidneys, passes off in perspiration. Do not work or ride him.

WHITE OINTMENT.

For rheumatism, sprains, burns, bruises, &c., or any inflammation on man or beast, chapped hands or lips, black eyes, or any kind of bruises which are

so common to both man and horse, the following is as valuable a remedy as can be used for these very troublesome complaints:—Take two pounds of fresh butter, half an ounce of tincture of iodine, two ounces of oil of origanum; mix it well for fifteen or twenty minutes, and it is ready for use. Apply every night, rubbed in well with your hand. If for human flesh, warm flannel is more suitable, laid on the part affected.

BLACK LINIMENT.

This is good to apply on pollevil or fistula. In fact, it is good for any swelling:—Take half a pint of linseed oil, three ounces of tincture of iodine, four ounces of turpentine, one ounce of oil of origanum; shake it well together, and apply every day. Rub it in well with your hand, and do not fail to wash the part clean with soap and water.

A SALVE FOR MAN AND HORSE.

This may be used for all kinds of sores of long standing, as it has been found an excellent remedy. Take two ounces of honey and half an ounce of rosin, and melt them together; then add lard enough to make a paste. When cool, it is then fit for use.

CANKER OR THRUSH, OR SORE MOUTH AND TONGUE.

This is caused by frosty bits being put into the mouth, or by eating poisonous weeds. The following mixture will cure the disease:—Take one pint of vinegar, one pint of sage tea, half an ounce of alum, two drachms of sugar of lead, and three drachms of borax; shake it well together, and wash out the mouth every morning. No hay should be given for twelve days.

GROGGY KNEES

Is caused by over-driving or sprains, or by having corks and no toes on the shoes. If it is taken in its first stages, it is curable; but if of long standing, there is no cure for it. Have the shoes made thin at the toe, and thick at the heel. Take two ounces of laudanum, one ounce of spirits of camphor, four ounces of alcohol, and half a pint of linseed oil. Shake it well, and apply at the back part of the legs, and rub them well every three or four days; also increase the thickness of the shoes at the toes.

WARTS.

The sure way to remove warts is to cut around them; then take the tenaculum or hook, run it through the warts, and draw them out by the roots. If it should bleed too much, mix one ounce of water

with five grains of nitrate of silver; wet a sponge, and merely touch the parts with the wash, and it will stop the bleeding. Treat it the same as you would any other fresh wound. Scratch off the scab every time you wash it, so that the scar will be small. There may be other ways, but I would not recommend any other.

BOTS IN HORSES.

When a horse is attacked with bots, it is very much like the colic. The ears and legs are hot, and sometimes the sweat will start on the flank and breast. It is known by the occasional nipping at their own sides; also by red pimples or projections on the inner surface of the upper lip, which may be seen by turning up the lips. The following is a good and safe remedy:—

Take half a gallon sage tea, add to it one ounce of alum. Drench well with one-half of it; and if he is not better in thirty or fifty minutes, give the balance. Bleed one gallon, and give a mild physic in six hours. This must be given in time. Turpentine is not good, as it will affect the kidneys.

RHEUMATISM.

Caused often by cooling off too soon, after a hard drive, and standing in damp stables. Change of food will often cause it.

Liniment.

To a half pint of alcohol take a half ounce of origanum, also a half ounce of cayenne pepper, a half ounce of gum myrrh, a tea-spoonful of lobelia, and let it stand twelve hours; and bathe freely the affected part every morning and evening until there is a change.

Rheumatic Ointment.

This may also be used for different sores, sprains, bruises, &c.:—Take one ounce of tincture of iodine, four ounces of aqua ammonia, half a pint of linseed oil, and half a pint of turpentine; shake it well, and apply as above.

COLIC.

The horse often lies down, gets up suddenly, and looks at his flanks, strikes his belly with his hind feet, stamps with his fore feet; his ears and legs are cold, and he refuses all kind of food.

Mixture No. 1.

Take a half ounce of laudanum, one ounce of sulphuric ether, a half pint of water, milk-warm; drench, and if not better in half an hour, bleed, and repeat the drench. The horse should not be moved while sick, as is often done, and causes sudden death.

Mixture No. 2.

This is another good remedy which I would recommend if the No. 1. is not easily obtained.

Take three ounces of spirits of turpentine, one ounce of laudanum; mix well, and give all for a dose; put in a bottle with a half pint of warm water, which will prevent the throat being injured. If relief is not obtained in an hour, repeat the dose, with a half ounce of powdered aloes, dissolved together, and the result will be perceived very soon. For an injection, if the above does act very soon, and the horse should bloat or swell, take two quarts of hot water, half a pound of hog's lard, and four ounces of castile soap.

Mixture No. 3.

Take one ounce of laudanum, two ounces sweet spirits nitre, one and a half ounces aloes, half an ounce of alcohol, and four ounces of water. Mix for a draught.

Mixture No. 4.

Take of opium and camphor each two ounces, spirits of hartshorne, one ounce, oil of turpentine, two ounces, strong ale, one pint. Mix for a draught.

Mixture No. 5.

Take of pepper half an ounce, oil of turpentine, three ounces, laudanum, one ounce, strong ale, ten ounces. Mix for a draught.

Mixture No. 6.

Take of laudanum two ounces, ether, one ounce, oil of peppermint, one drachm, strong ale, five ounces, gin five ounces. Mix for a draught.

Mixture No. 7.

Take oil of turpentine, two ounces, oil of peppermint, one drachm, castor oil six ounces, tincture of aloes, three ounces. Mix for a draught.

Mixture No. 8.

Take of pepper half an ounce, gin, five ounces, strong ale, five ounces, and juice of two or three large onions. Mix for a draught.

Mixture No. 9.

Take of asafœtida half an ounce, squills one drachm, soap, two drachms, oil of turpentine, two drachms, balsam Peru, half a drachm, water four ounces. Mix for a draught.

Mixture No. 10.

Take of digitalis, half a drachm, extract of hemlock, two drachms, water, half a pint. Mix for a draught.

Anti-Spasmodic Injection.

Take of decoction of poppies, one gallon, spirits of camphor, one ounce. Mix well.

Anti-Spasmodic Drench.

Take of laudanum quarter of an ounce, ether, one

drachm, beer, four ounces, brandy, four ounces, oil peppermint, one drachm. To be given at one dose.

SPRAINS OF THE STIFLE.

The horse holds up his foot, moans when he is moved, and swells in the stifle. This is called stifling. There is no such thing as this joint getting out of place. Bleed two gallons; foment the stifle with hot water. Rub it dry, and then bathe it well with the general liniment. Morning and night give him a mash, and never allow the stifle-shoe or cord on the foot or leg.

HEAVES.

Reasons why it is not in the Lungs.—*First.* If the disease was in the lungs, it would create inflammation, and have the same effect as inflammation of the lungs by cold. The horse would be weak and drooping, without appetite, and really could not be driven two miles as any person would naturally drive a horse. But a heavy horse can be driven from eight to twelve miles within the hour. This is positive proof that it is not in the lungs.

Second.—Take a heavy horse and turn him out to pasture forty-eight hours, and he will breathe clear and easy, showing no signs of heaves. The grass has not reached his lungs, still it has stopped the hard breathing; but if you will give the horse

cold water to drink, he will cough. Has the water touched the lungs? No; but it has touched the disease. This is another reason why it is not in the lungs.

I will tell you where the disease is, and what it is caused by. *First*—A dainty horse is not liable to heaves, but a hearty eater is liable to this disease—not from the amount of food that he eats, but from the hoggish way of eating. There are two pipes leading to the stomach and lungs; where they meet there is a throttle-valve. A horse, on eating coarse food, scratches his throttle; then, by a hard drive, and warming the horse, he takes cold in this wound, and it becomes a running sore or canker. By turning the horse to grass, the juice cleanses and washes the wound; the grass, being cool, takes the inflammation from the disease; the swelling is gone, and the horse breathes freely and easily as ever. This is positive proof that it is not in the lungs. Then, by feeding with coarse and dry hay, it irritates and creates inflammation, and causes the horse to breathe hard again.

Cure No. 1.

Take balsam of fir and balsam of copaiva, equal parts; add enough calcined magnesia to make into balls. Give a middle-sized ball night and morning, for ten days, or two weeks—a ball about the size of a yolk of an egg. This is a sure cure. I never made a failure in any case. You should be

careful about feeding for two weeks after giving the medicine. Cut feed and wet the hay. A little brown sugar in his food for a few days would be good.

Cure No. 2.

Take calcined magnesia, balsam of fir, and balsam copaiva, of each one ounce; spirits of turpentine two ounces; and put them all into one pint of best cider vinegar, and give for a dose a table-spoonful in his feed once a day for a week; then every other day for two or three months.

Cure No. 3.

Take lobelia, wild turnip, elecampane, and skunk cabbage, equal parts of each. Make into balls of common size, and give one for a dose; or make a tincture, by putting four ounces of the mixture into two quarts of spirits; and after a week put two table spoonfuls into the feed, once a day for a month or two.

Cure No. 4.

Take oyster shells, one peck; burn into lime and pulverise; mix a single-handful of it with half a gill of alcohol, then mix it with the oats each morning until all given. Feed no oats at night.

Cure No. 5.

Commence with a piece of pork, say a cubic inch, chopped very five, and mixed with the wetted grain

or cut feed, twice a day for two or three days. Then from day to day increase the quantity and cut less fine, until there is given with each feed such a slice as usually by a farmer's wife is cut for frying—nearly as large as your hand, cut into fifteen or twenty pieces.

DUMBNESS IN HORSES, OR MAGRINS.

This is often noticeable by the horse being dull in driving, with an inclination to bear hard on one rein and leave the road; also sleepy while standing; loses all feeling, pays no attention to the whip, and in some instances the horse is taken with a jerking up of the head, and will run back and fall down, lie for a few minutes, get up and go on. This is often called fits, but it is the same disease. The cure for it is doubtful; but this treatment will have the effect if taken in time:

Bleed and physic, give regular exercise; keep in cool stable; do not give him strong feed, fodder or blades; half an ounce of tincture of asafœtida every day for one week, and then tie the gum upon the bits and wear it on them all the time. The stable should be well ventilated and clean; apply lime every ten days. Diseases are often caused from the ammonia arising from filthy stables, which in many cases effects the eyes.

BLIND STAGGERS.

This disease is brought on by giving too much feed and water when driving. The grain becomes swollen, and the stomach distended by undigested food; by this means the circulation of the blood is stopped, and flows to the head and makes the horse crazy and blind.

Cure No. 1.

Bleed one gallon from neck vein, split the skin of the forehead, and fill with salt and black pepper; get sasafras roots and boil to a tea. Give one gallon twice a day. Feed light with bran mash; do not use hearty food for two weeks.

Cure No. 2.

First, physic with one ounce of aloes dissolved in warm water, and give as a drench; in one hour, give half an ounce more of aloes, and continue this until it operates. As soon as the first is given, blister the head with a strong fly blister; apply this over the brain, from below the ear, *nearly* down to the eye; then bathe the legs with as hot water as you can use, and bandage them with flannel; keep them as warm as possible. Then give one drachm of digitalis, one and a half of emetic tartar, and three drachms of nitre. If it is to be repeated, use half of the above amount in three hours. Then if he has any disposition to eat, give bran mash, with one table-spoonful of pulverized resin; use this for

a week as he recovers, and feed and work lightly until he regains his strength. If he is bound up, it may be necessary to use injections, which are always beneficial.

SCOURS AND PIN-WORMS.

This disease is somewhat similar to the cholera in man; but very easy to manage. In warm climates it is dangerous, and nearly all horses that take it die in three or four days.

Cure No. 1.

Take red or white oak bark, boil to a strong tea; add two table spoonfuls cream of tartar, to one quart of this decoction; give as a drench; then use the bark tea as an injection. Keep this up until the purging ceases; then give wheat bran mash scalded, twice a day; hay or grain is not good, as it will cause a relapse. If he has a good appetite you must be very careful for a few days, and commence feeding very light.

Cure No. 2.

Take one to one and a half ounces of tormentil roots, powdered, and stir it in a pint of milk, or it may be steeped in one pint and a half of milk, and given from three to five times a day. This was never known to fail, if given in time. When it becomes certain that the horse is troubled with pin-

worms, by the passings from the bowels, it is best to administer the cure No. 1, as it is generally believed that they are the cause of the scours, and this remedy carries off the worms.

SPAVIN AND RINGBONE.

The first-named disease comes at the lower part of the gambrel joint. It is caused by a strain or bruise; either will cause it. This opens the pores, and causes the substance to concentrate at one place, forming a gristly or bony substance, and causes the joints to become stiff and sore. The horse sometimes becomes lame before enlargement is perceivable. In some cases, it will continue to grow for two years; it will then become a hard bone. The enlargement at this stage cannot be removed; you may kill the disease, and stop the lameness. The great object with this disease is to stop the leakage. There has nothing been used as an astringent, when, by removing the lump without the astringent, it leaves the parts loose and open; but if used, it closes and stops the pores. Then, by letting the horse stand until it heals, it becomes firm.

Cure No. 1.

Cantharides, four ounces; origanum, two ounces; sulphate of zinc, one ounce; Venice turpentine, three ounces; murat, tinct. iron, two ounces; verdigris, three ounces; oil vitrol, two ounces; fresh

lard, one pound. Shave the hair from the part diseased, and rub the parts with the medicine. You must use your own judgment in using this medicine; that is, in the length of time necessary to remove the callus. It must be used every other day; this will dissolve the ossified substance and ooze it out. When you see the lump is diminished enough, then use the same astringent as I have directed in the other cure, that is, white oak bark and alum; a quarter pound to half a gallon of bark juice, boiled down to a strong decoction. Use twice a day, morning and evening.

Cure No. 2.

Egyptiacum and wine vinegar, of each two ounces; water of pure ammonia, spirits of turpentine and oil of origanum, of each one ounce; euphorbium and cantharides, of each one-half ounce; glass made fine and sifted, one drachm; then put them in a bottle, and when used, let them be well shaken.

This is to be rubbed upon the bone enlargement with the hand or spatula, for half an hour each morning, for six or seven mornings in succession. Let the horse be so tied that he cannot get his mouth to the place for three or four hours, otherwise he will blister his mouth and blemish the part. Then let him run until the scab comes off of itself without scraping so as to injure the roots of the hair. Then repeat as before, and follow up for three or four

times blistering, and all bone enlargements will be re-absorbed, if not of more than one or two years' standing.

It is also good for callous sinews, and strains of long standing, spavins, big-head, &c.; but if there are ringbones or spavins of so long standing that this does not cause their cure, you will proceed as follows:

Add to the above compound, corrosive sublimate in powder half an ounce, oil of vitrol, half an ounce, and common salt half an ounce; when it is again ready to use, always shaking well as you use either preparation.

Cure No. 3.

Take of cantharides, two ounces; mercurial ointment, four ounces; corrosive sublimate, three drachms; turpentine, three ounces; tincture iodine, two ounces; gum euphorbium, half an ounce; mix well with two pounds of lard; color it, if you like. Follow the directions here given. If for ringbone or bone-spavin, cut off the hair from the part affected, and merely grease the lump with the ointment. Rub it in well with the naked hand. In two days grease the part with lard, and in four days wash it off with soap and water, and apply the ointment again. So repeat it every four days. If for wind-galls, or bog-spavin, or curb, apply the ointment every six days. For splints, the same.

BROKEN KNEES.

This is caused by falling on the knees. Cleanse the parts of all gravel and dirt; then wash them. Take two gills of alcohol, and half an ounce of arnica. Tie the knees up in coarse muslin; and if they should swell in twenty-four hours, bleed him. The bowels should be kept open with mashes; then apply the blue ointment as found in the recipe for Grease Heels, or the iodine ointment, every other day.

Iodine Ointment.

Get one ounce of iodine, and one pint of alcohol. Let this stand in the sun for two or three days; this is the tincture of iodine. Take half a pound of lard to two ounces of tincture, and mix it well, and you have a good ointment for any swelling.

MANGE AND SURFEIT.

This is caused by the horse running out in wet weather, poor cleaning, and often by over-driving. The horse rubs and itches all over, and breaks out in scabs.

Ointment.

Take half a pound of sulphur, two pounds of lard, and mix them well. Rub well the parts affected every two or three days, and let him stand in the sun until it dries in. Give him a dose of cleansing powder, (see page 23.)

FRESH WOUNDS.

First stop the blood by tying the arteries, or by applying this wash:—Take four grains of nitrate of silver, and one ounce of soft water; pour it on the wound, and draw the edges together by stitches one inch apart. Wash it clean; and if swelling should take place within twenty-four hours, bleed him, and apply the blue ointment (page 20), or any of the liniments spoken of. The bowels must be kept open.

The green ointment may also be used for galls, scratches, cuts, or fresh wounds; and it is a good stable ointment.

Green Ointment.

Put into a ten-gallon kettle two gallons of water; add six pounds of lard, cut jimpson weed, and fill them in. Cook them slow for six hours, and let all the water boil out. Put it into a jar, and add to each pound of ointment one ounce of turpentine.

BUTTON FARCY.

This is a disease of the absorbents in the skin. The small arteries are employed in building up and nourishing the different parts of the body; and another set of vessels are busied in taking up and carrying away that which is useless. There is no part of the body on which thousands of these little tubes are not open. Those of the skin are not only

employed in removing useless material, but in taking up various substances and fluids which may be in contact with the skin. The vessels which are thus occupied collect together and form large bunches, and run in company with the veins; and from this, farcy was once supposed to be a disease of the veins, as the tumors which mark it accompany the course of the veins.

The poison which they take up produces inflammation in them, which gradually causes the absorbents to swell.

These minute vessels contain valves, which permit the fluid to pass only one way; it cannot turn back. Thus the inflammation, causing the valves to swell, retards their usual play, and hinders the natural flow of the fluid, whose poison, thus stopped, inflames the valves more, and causes the tumors of the button farcy. They will generally be found on the inside of the legs, along the course of the veins. Sometimes the horse will lose his appetite for several days before the legs swell, or the farcy buds appear; and then, again, he will not droop for several days after they show themselves. But from the first his hair will look dull and rough, and he will lose flesh. These farcy buds are larger than those caused by surfeit.

Farcy is a most perplexing disease. Sometimes one of the hind legs will swell in one night, so that he is quite lame; then it may suddenly remove to the other leg. It should be bathed, as soon as

possible, in water as hot as he can bear, and then wrapped in blankets, to keep the heat in as long possible. This will open the pores, and stop the swelling.

In other cases, the head will swell first, and discharge at the nose, and the heels will crack.

When the buds have broken open, or feel as though there was matter in them, take an iron, at a dull red heat, and touch them all. In a day or two the scab will come off. If they look pale, they should be washed with a lotion composed of one drachm of corrosive sublimate dissolved in one ounce of rectified spirits. All of these buds should be opened as soon as you ascertain that there is matter in them; then wash with the above lotion. You may use aloes for a physic in this disease, and give sassafras tea for a drink, made from the roots or bark of the roots. After the purge is stopped, use two drachms of gentian and one of ginger, morning and night, until the ulcers disappear. During this treatment, the horse should be kept in a dry place, and clothed. Bathe the legs every night in hot water, into which put a shovel of hot wood-ashes, making a weak lye. When he regains his appetite, be very careful in feeding. Give him mashes at least twice a day, until he gets his strength; then give green food, if possible.

In very severe cases of farcy, internal medicines will be necessary. Use of corrosive sublimate ten grains, increased to a scruple, with the two drachms

of gentian, and one of ginger; repeat morning and night, until the ulcers disappear.

FOUNDER.

This is caused by contraction of the muscle. The horse is stiff, has hot feet, trembles, and is very thirsty. After heating, and allowing him to drink too much, and stand in the cool air, the muscles become contracted.

The coffin muscle is most injured which lies within the circle of the hoof. The horse cannot be cured in a short time; but if proper remedies be applied, the horse can be cured within a week.

Cure No. 1.

Take one and a half or two gallons of blood from the neck vein; then give, as a physic, six drachms of Barbadoes aloes, dissolved or in balls. Cover the horse over; then commence bathing with as hot water as you can use. Keep this up for an hour, at least. Then stretch an old pantaloon leg over each of his fore legs, bind it around the hoof, and fill in with hot boiled oats; give, as a drink, sassafras tea, made from the root; and give bran mashes, with a table-spoonful of pulverized resin. He should have a mash once a day for three or four days. This will cure him.

But in case of founders of long standing, or even if the hoof has shrunk to the contraction of the mus-

cle, it will be necessary to treat it somewhat differently. The bleeding should be omitted, the legs bathed twice a day, and the feet should be poulticed with flaxseed meal three times a week; the hoof should stand in clay mortar three times a week, at night, or in day-time, if he is not at work. If he could run out to a marshy pasture, it would not be necessary to poultice. But he must have something to act on the blood. Take of digitalis four drachms, emetic tartar four drachms, nitre six drachms; divide this into two doses, and give one in three days. Between the days that this is given, give bran mashes mixed with sassafras tea. This physic may be given once in every three weeks, with the feet always to be kept moist. It will take three months to effect a cure. When of long standing, the muscles of the shoulder sometimes contract, as in sweeny. In this case a seton, of from nine to fifteen inches, may be used, according to the contraction.

Cure No. 2.

Bleed from the neck vein three or four gallons, or until he falls; then give the following: One half ounce of aloes, four drachms gamboge, one half ounce oil of sassafras; make this into a pill, give it, and give him all the sassafras tea he will drink; turn up his feet, and fill them full of boiling hot lard; bathe his legs in hot water, and rub them well. This will never fail to cure in forty-eight hours.

QUINSY.

The symptoms of this disease are something like inflammation of the lungs—difficulty of breathing, eyes inflamed, nostrils distended, breath quick and short. He stands with his head down, and has no disposition to move about; and you will hear a rattling in the throat, caused by an accumulation of mucous matter in the glotis or throttle, which becomes swollen, so as to be perceivable on the outside of the throat. A horse with this disease sometimes has an inclination to eat, but with the lung fever, never. Quinsy is entirely an affection of the glands of the head and throat, distinct from the lungs.

Take one ounce pulverized aloes, to half an ounce oil of sassafras; mix with a little flour to make it thick, and then make it into balls about the size of a black walnut, or the yolk of an egg. This quantity is for one dose. Open the mouth, pull out the tongue, and put the ball on the roots of the tongue. This is the easiest way to give medicine. A thick heavy blister should be drawn on the throat, with a mustard or fly poultice, to draw the inflammation to the surface. Bathe the limbs with hot water, and bandage them well from the hoof to the knee; bathe three or four times a day. When he has a disposition to eat, give a mash of scalded wheat bran—two quarts twice a day. Give no hay or grain for three or four days; then, if he breathes easy, you can

increase the feed. Keep the horse from the wind, and well blanketed.

DISTEMPER.

This disease is first discovered by swelling under the jaws, and the horse cannot swallow. This often causes thick wind. By breaking in the throat it becomes a collus, where the opening of the throat was; and when checking the horse up, there is not room for the wind, and he wheezes. By stopping this, he breathes easy again. It is most liable to attack young horses or colts; and by taking it in time, there is not much danger. When it first makes its appearance, use either of the following remedies:

Remedy No. 1.

Bleed freely from the neck vein, and give from one-half to one pint of linseed oil, with three drachms of sassafras oil.

Remedy No. 2.

Bleed two gallons, and give him physic. Then, if a tumor is found under the jaws, open it; if not, apply the general liniment or white ointment. Make it break on the outside, if possible; then give the cleansing powders, in mashes, for ten or twelve days.

General Liniment.

Take half a pint of turpentine, half a pint of linseed oil, four ounces of aqua ammonia, and one ounce of tincture of iodine; shake it well.

STOPPAGE OF WATER.

This, in most cases, is from allowing the horse to become foul; then what is called a bean forms in the end of the penis. The horse will stand and weave, or stretch out; then paw and kick his belly with his hind legs. He may drop down in harness, and sometimes breaks out in a profuse sweat. The only thing to be done in this case is to draw his yard carefully, and run the finger around the head, where you will find two or three hard substances; withdraw them, and wash the sheath clean, and grease it with lard.

In some cases it originates from contraction of the muscles of the loins, or inaction of the kidneys. To cure this, bathe the loins with hot water for half an hour; then bathe with hot vinegar and pepper-sauce; then cover the loins with three or four thicknesses of blankets. Mix of turpentine one ounce, sweet spirits of nitre two ounces, and give it as a drink. Give him a bran mash, with one spoonful of resin in it, every day for a week, and the cure is complete.

WATER FARCY.

This is a swelling along under the chest, and forward to the breast. Bleed, rowel in the breast, and all along the swelling, six inches apart. Apply the general liniment to the swelling; move the rowels every day; let them stay in until the swelling goes

down. Give soft food—mashes with the cleansing powder in it.

DIABETES, OR TOO FREE DISCHARGE OF URINE.

Give half an ounce of tincture cantharides every morning, for ten or twelve days; and if not entirely well, repeat it again, and bleed one gallon from the neck. Give clean food. The cause is rotten or musty grain, or too free use of turpentine. Keep him open with mashes and green food.

PLEURISY.

This is an attack of the membrane covering the lungs and the lining of the chest, called the *pleura.* The symptoms are nearly the same as in inflammation of the lungs. The horse has no disposition to lie down or move about. The neck will be the same as in lung fever; nostrils distended, and the membrane of the nose very red. He breathes very hard, with a kind of grunt; the legs will be cold, and he will have a hard, full pulse. The blood, however, is not obstructed in its passage through the lungs. By pressing on his side, he will give symptoms of pain in a very decided grunt.

Blister both sides of the chest, and bathe the legs in hot water; or boil bran, and then put an old pantaloon leg on over his, and fill in around with hot bran. This will get up a circulation in the

extremities. Then give one and a half drachms of emetic tartar, two drachms of digitalis, and three drachms of nitre. Keep him well covered with warm clothing. Use one ounce cream of tartar in two quarts of tepid water, for a drink. Be sure to keep the legs warm by hot applications and bandages. Use these medicines until a cure is effected.

EARACHE.

This is generally called flea in the ear. The horse is taken suddenly with shaking of the head, and holding it to one side or the other. These attacks are generally as soon as the animal is taken from the stable into the air. This is frequently brought on by drenching the horse in the ear to cure fistula and pollevil. This practice should be abandoned.

Take equal portions of olive oil and laudanum; shake it well, and drop fifteen or twenty drops into the ear every time the horse is taken. If you find, by pressing upon the under part of the ear, at the root, he flinches much, it would be proper to apply some of the liniment every few days.

DROPS TO MAKE OLD HORSES YOUNG.

Take one ounce of asafœtida, one ounce of tincture cantharides, two ounces of antimony, one ounce tenu greek, and half a gallon of first-proof brandy.

Let it stand twelve days, and give him twelve drops in each gallon of water.

THUMPS IN HORSES.

This is caused by too much feed and water, and fast driving. Overloading the stomach with food and water, then driving fast, the stomach becomes distended with undigested food, which prevents the inflating of the lungs; the muscles of the lungs become sore and weak, and cause them to thump. If this is of long standing, it will be incurable; but by a moderate amount of water, and a reasonable quantity of grain, you will prevent it.

RESTORATION OF THE APPETITE.

Take four ounces of pulverized caraway seed, four ounces of bruised raisins, two ounces of ginger, and two ounces of palm oil. Always use twice as much of the first as of the last, in whatever quantity you wish to make. Give it to him in small balls, once a day, until the appetite is restored. Use a bran mash at the same time.

POULTICES.

Few horsemen are aware of the value of these simple preparations, in abating inflammation and

relieving pain, cleansing wounds and causing them to heal. They are the best kinds of fomentations; they continue longer, and keep the pores open. In all inflammations of the foot, and in cases of contractions, they are very beneficial. A poultice that retains the heat and moisture longest is the best. They will relieve swellings, take out the soreness from the pores, and draw out the unnatural substances.

Linseed meal makes the best poultice; it will hasten any tumor that it is necessary to open, and cleanse any old one, causing a healthy discharge, where it is offensive. But in this case—when the ulcer swells badly—add two ounces of pulverized charcoal, or chloride of lime; half an ounce to one pound of meal. This is good to use in grease or cracked heels.

A poultice should never be put on tight. Carrots are very good, mashed fine, after boiling soft. The coal may be used in this also, where the parts smell offensively.

ADHESIVE PLASTER.

These plasters should be used over parts that have been strained, or otherwise weakened, and on deep-seated inflammation of the loins or back sinews. They are always to be applied warm, as then they will adhere for a long time. The following is a good plaster:

Take five ounces of Burgundy or common pitch, one ounce of yellow wax, and six ounces of tar. Melt them together; and when cooled to blood-heat, add half a drachm of pulverized cantharides. Stir it well together.

When you apply it, warm or melt it over, and rub it well into the hair upon the sprain; then, while it is warm—for it should be applied as hot as possible—spread over it a lint of tow, well picked, and pat it down with the hand. This will make a strong covering, and will remain for months. It will gradually remove deep-seated inflammation, and, by its pressure, promotes the absorption of any callus or thickening beneath; at the same time, as a bandage, it gives strength to the parts.

PHYSICING.

There is more injury done in the practice of this, than in any other medical treatment of the horse. The old practice has been to physic and bleed every spring; but this is only necessary when the horse is really sick. When you change him from the pasture to the warm stable and dry food, it is also good; but the horse must be prepared for it. Give him three or four mashes before the physic, and, in the majority of cases, they will be sufficient without it, especially if the bowels are slightly moved; for the less medicine given the better.

After the physic is given, the horse should have walking exercise for an hour or two; but when it begins to operate, he should be kept as still as possible, or the medicine would be likely to gripe, and perhaps irritate the intestinal canal, and cause inflammation. You can give him a small amount of hay, and as much mash as he will eat, and as much water, with the chill off, as he chooses to drink. If he will not drink tepid water, give him about a quart of cold water every hour. When the purging ceases, give a mash twice a day, until you give more physic, which should be once in a week.

Barbadoes aloes is the best purgative, being always sure and safe. The dose, with the horse prepared by bran mashes, would vary from five to seven drachms—the latter sufficient for any horse. You can dissolve it in warm water, and give as a drench, or make it into a ball with linseed oil, and lay it upon the roots of the tongue, letting go the tongue at the same time.

The next best purgative is the Croton nut—the farina or meal of the nut being used. It should be made into a ball with linseed oil. Give him from a scruple to half a drachm, according to the state of the subject. It acts more speedily than aloes, but causes more debility. Linseed oil is uncertain, but safe, in doses from a pound to a pound and a half. It leaves the horse in very good condition.

FOMENTATIONS.

The benefits derived from these results from the warmth of the water, and not from any medicinal property in it otherwise. Fomentations increase the warmth of the skin, and open the pores, promoting perspiration; and thus relieving inflammation, lessens the tension and swelling of the part. Fomentations, to be of benefit, should be frequent and long, and as hot as the horse can bear. There is no way to relieve the distended vessels so quickly as by this remedy.

For all external inflammations, and in the early stages of internal, cold water bathing will be best. Dissolve one ounce of nitre in one pint of water, and it will make the water much colder. Use it as soon as dissolved, and do not bandage for an hour after bathing; then bandage to strengthen the leg.

BLISTERS,

Or any stimulating applications, must not be used on any part already inflamed. It increases the fire, instead of putting it out.

BLISTERING.

The most effectual blister is an ointment made as follows:—One drachm of Spanish flies, one drachm of resin, and four ounces of lard. Melt the resin

and lard together, then add the flies. Rub the parts with the hand until you create a heat, then apply the blister. This is good for strain in the pastern.

The best liquid blister is cantharides and turpentine—equal parts.

ACTION OF THE KIDNEYS ON THE BLOOD.

The blood contains a great quantity of watery fluid, unnecessary for the nutriment or repair of the frame. There also mingles with it matters which would become noxious if allowed to accumulate too much. The kidneys are actively employed in separating these fluids, and in carrying off a substance which, as an ingredient in the urine, is called the urea, and consists of what would be poisonous to the animal, if remaining.

The kidneys are two large glandular bodies placed under the loins, very much the shape of a kidney bean. The right kidney is forward under the liver; the left is back by the stomach and spleen. A large artery runs to each, and carries about one-sixth part of the whole blood that circulates through the frame. It divides into numberless little branches, most complicated, and coiled upon each other. The blood has waste parts, which, if allowed to remain, would be very injurious; and these must be separated from it.

The fluid separated varies materially in quantity and composition, even during health—more so in the horse than in any other animal—and there is no organ so much under our control as the kidneys.

Diuretics are the most useful of medicines, and at the same time, the most injurious, if improperly used.

In fevers, and in inflammation generally, for a diuretic, use nitre and digitalis, on account of their sedative effects. They stimulate the kidneys to separate more than the usual quantity of water from the blood, and lessen the quantity of the latter. The object in this is to reduce the circulation, and thus ease the heart in its labor, by calming the excitement. An overflow of blood gives quicker action to the heart, and causes the heavy beating you will notice in lung fever. Diuretics lessen the blood, and give more perfect control over the heart.

In cases where the legs are swelled, the absorbents set to work, and take up and pour into the circulation the fluid which has been effused into them.

The legs of some horses cannot be rendered fine, nor kept so, without the use of diuretics; nor can what is called grease heels—frequently connected with these swellings—be cured without the use of these medicines. But in the use of them, always let the horse have plenty of tepid water; the more the better. You must also be careful not to keep him too warm; for if he sweats, the medicine, instead

of stimulating the kidneys, passes off in perspiration.

TO KEEP HORSES FREE FROM DISEASE.

The stable must be clean and well ventilated. There is nothing so conducive to good health as pure air and clean food. The ceiling of the stable should be at least ten or twelve feet high, with a ventilating box at the head, four inches square, running out at the roof. The loft should be perfectly tight, so that the breath of the horse cannot rise and mix with the hay, which may be injured both in taste and wholesomeness. It is a bad plan to put hay in a rack; the horse breathes on it, and makes it less palatable and healthy. Feed from a box in front, and but little at a time; he will neither waste it or otherwise injure it. The ventilation in the wall of the stable should be as high up as possible, so as not to injure him by drafts of air, from which he should always be kept. These currents of air are one great cause of inflammation of the lungs.

Baltimore is one of the worst places for this disease, for this reason—it is one of the best markets for horses. They are bought up in Kentucky, and are taken by traders to small towns first, where they are well clothed and pampered; they are then brought to market, and put in large brick stables, with doors at each end, and with a great number of horses in the same stable. The air, from so many

breathing it, is bad, and the hay is more or less injured. The doors are opened every morning at each end of the stable. The groom goes to work cleaning out his stalls, after which he unhitches a horse, and backs him out of his stall into the centre of the stable, where the current of air is sweeping through. The groom goes to work, after he has stripped off the clothing, with his comb and brush. The pores of the skin are open, and by the time he has been in his stall five or ten minutes, he begins to shiver, or has a chill, which may be the commencement of lung fever, quinsy, or some other disease.

Filthy stables cause weak eyes, and a running at the nose, in many instances. The decomposition of vegetable matter and the urine, gives out stimulating and unhealthy vapors, and a very strong smell like hartshorn. How can it but cause inflammation of the eyes or lungs, or glanders and farcy? How common are these diseases in large cities, at the horse markets!

Be careful and have your stables so that the urine will run off; but do not raise the planking so that it will be higher at the front than at the back, for this will cause a strain of the back sinews, and lameness, and thickening up of the same. For instance, try yourself to stand with your toes up, and see if it does not make the calves of your legs ache. It is an unnatural way for a man or horse to stand. This would also cause contraction of the heels, by throw-

ing too much weight on the toes, and removing the pressure from the heels, which tend most to keep them open.

The horse-stalls should have holes bored in the planking, and be kept open. In summer, the horse should always stand on straw, or litter of some kind; it relieves the feet in stamping. It is not necessary, however, if he stands on a dirt floor.

You should always have the stable light. It is very injurious to keep horses in a dark stable, as it is bad for the eyes, and many horses go blind from this cause. But you should likewise avoid a glaring light, or very white walls. Give him a mellow light, with clean stabling, clean food, clean litter, and all will be well.

PRICK OR GRAVEL IN THE FOOT.

There are many causes for sudden lameness in the horse. The taking up of a nail or any hard sharp substance on the road, or a prick by the blacksmith in shoeing, are the most common causes.

In removing the shoe to ascertain the cause of the lameness, every nail should be drawn separately and carefully, and then examined to see if there is any moisture, or matter adhering to it, for the nail which has caused the prick will be likely to bring some signs out with it; then the foot should be pared off, and examined. If punctured near the toe,

it may not injure the foot much, as there is but little motion at that part, and it will soon heal; but a puncture in the centre of the foot may wound the flexor tendon, and may even pierce through the tendon into the joint, and inflammation may ensue, which, if neglected, would prove fatal.

The smallest puncture in these parts is dangerous. When the lameness is caused by taking up a nail, the nail should be withdrawn, and the sole pared down at the opening. Then put in the wound one or two drops of antimony—the butyr—and put tow over it, and bind it on; let this remain on for two hours, then bind on a piece of raw fat pork; but if the foot becomes inflamed, put on a poultice of flax-seed meal, or any other kind that is drawing, and if there is a slight formation of horn over the wound, cauterize it again with the antimony, and afterward poultice again. If there is an appearance of fungus sprouting from the exposed surface, the application of the butyr should be frequent, and this treatment will soon heal it up. In searching the foot, be careful not to pare away too much of the horn and sole; after paring off the frog and sole, and smoothing it, you can ascertain by a few taps of the hammer on the horn if there be a prick.

In all cases of taking up a nail, or gravel, or a prick, the butyr of antimony, as a caustic, will kill the poison from the nail, and the poultice will relieve the inflammation.

The wound should never be stopped up, as many

do, with pitch and tar, which keeps the virus in, and causes more to accumulate, and finally breaks out at the top of the hoof or coronet. The wound should be kept open in the first place a number of days, until it has discharged freely; it may then be necessary to use the horse salve to heal it up. In cases where there is much inflammation, a gentle purge should be given, of five drachms of aloes in a ball. He should first be prepared for it by giving bran mashes a day or two before the purge.

FEVER.

If there is any local inflammation in the horse, the whole system sympathizes with it, and sometimes causes fever; and sometimes there is a general fever of the system, caused by colds taken by being kept in ill-ventilated stables, and being taken suddenly from them into the extreme cold.

But the lungs are so weakened by this treatment, and the feet are so tender from bad shoeing and careless management, that a general or pure fever will not run long before it settles into inflammation of these parts; but sometimes the fever will run its course as such.

The horse, when taken with fever, often shivers as if cold; he does not seem inclined to move, and his hair will be rough, set forward or up, and his feet cold. Then follows a warm turn, only that while

some of the legs are warm, the others will be very cold. His pulse is quick, soft, and sometimes you can hardly feel any; he breathes hard and unnaturally, has but little appetite, and becomes very costive.

During the course of the fever, the shivering fit returns about the same hour every day, followed by the warm one, with slight sweating, until it runs its course, or settles into local inflammation.

It will be dangerous to give an active purge, but one drachm and a half of aloes should be given at night and morning, until the bowels are slightly relaxed. About an hour after giving the aloes, give digitalis, emetic tartar, and nitre, one drachm each, until the pulse becomes more regular; make a ball of this, and roll up in tissue-paper; then give white hellebore, half a drachm, night and morning. As soon as he will eat, give him bran mashes twice a day, and boiled oats the same, about a quart at a time. If symptoms of inflammation of the lungs should appear, clothe him warmly, and keep his stable well ventilated, and treat him otherwise as given under the head of inflammation of the lungs.

COLIC OR CHOLERA IN MULES.

This appears to be a prevalent disease on the plantations, and is brought on by giving too much food and water at one time, and then immediately

putting them to work. The hard work retards digestion, and a gas is generated from the food and water, which fills the stomach and bowels, and sets the bots at work. The gas would kill the bot, and to save himself he bores into the membrane of the stomach, or tries to get out at the meat-pipe, or by the passage between the stomachs. They will thus stop up the passages, sometimes, and kill the animal. But if the passages are open, the gas will pass into the bowels, and then the disease is colic. He will be much swollen and distended, breathe short and hard, and will fall or lay down, and get up; his ears will lop over on each side, and his eyes look dull and heavy. When the mule is first taken, take him out of the stable, and keep him as still as possible, and, in the majority of cases, he will recover without the use of medicine.

If he does not thus get over it, take one ounce laudanum, one ounce ether, two tablespoonfulls of soda, two drachms of peppermint; put with half a pint of hot gin, and give as a drench. Then give injections of one ounce of aloes dissolved in warm water. This is an effectual cure.

METHOD OF ADMINISTERING MEDICINES TO HORSES.

The author almost invariably administers medicine in the form of drench, using a common champagne bottle. Some persons, however, assert that

"there is great danger in drenching horses from a bottle, and that it is very difficult to make them swallow fluid." We never knew of any accident following the use of the bottle, where ordinary caution was observed. There is a space between the canine teeth and grinders where the bottle can be introduced, and if kept in that position while "drenching the horse," it cannot do any harm. Our usual plan is, to stand on the right side of the horse, our back turned towards his body; we then take a firm hold of the lower jaw with the left hand, at the same time moderately elevating the head, (not too high,) while with the right we gradually pour down the contents of the bottle. Time should be taken in the process, and if it is poured down in small quantities at a time, so much the better; the horse will be more likely to swallow it, especially if it shall be made palatable by the addition of a few caraway seeds or a little honey. Horses, like children, must be handled in the most gentle manner. They will generally refuse to drink even a little gruel, when any unnecessary severity is resorted to in its administration. They may be coaxed, but not forced.

In answer to the second objection, we observe, that there is no more difficulty (not half so much) in administering a drench to a horse, under ordinary circumstances, than there is in giving a ball. To the latter we have great objections. First, in reference to its bulk; secondly, the length of time it takes for the gastric fluids to dissolve it; and lastly,

its action is uncertain. Whereas medicine given in the fluid form, is readily taken up by the lacteals, and operates, for good or evil, in much less time. It has also been urged that, when a horse is suffering from disease of the respiratory organs, the additional excitement following the use of drenching is unfavorable to the cure. Unfortunately, we are in a worse predicament when a ball is given, for then the tongue is forcibly drawn out of the mouth, while the hand is passed up to its root, where the ball is deposited. Our own experience in the matter leads us to decide in favor of the bottle. If any further proofs of its utility are wanting, we may mention the fact that one-half of our city horsemen are in the habit of administering drink from the bottle without accident.

LYMPHATITIS.

"Lymphatitis is a disease which, although without place in any of our systematic books by our professed writers, is yet, upon the whole, well known, and is designated by a variety of names. In Scotland, for example, it is called *weed;* while in various parts of England it is known as *felltick, thick leg, farcy, water farcy, shot-o'-grease,* and a number of others which it is unnecessary to detail, and which, if detailed, would be perfectly impossible to understand. Fifteen years ago, a Mr. J. Henderson wrote a paper upon this affection, which the reader will find in the ninth volume of *The*

Veterinarian; and from that time to the present it does not appear that our knowledge of its pathology is very greatly increased.

"*Symptoms.*—The disease, for the most part, commences with a shivering fit, though, in many cases, its existence may be so slight, and its duration so short, as not to be noticed by any save a careful observer. Generally the attack is very sudden; the owner, or the servant in care, may go now, as it were, out of the stable, and leave his horse to all appearance perfectly well; and upon returning in an hour hence he will find him standing upon three legs, while the fourth will be flexed and held high from the ground; the pulse will vary in its beats according to the intensity of the attack, rarely, however, beating less than fifty, or more than one hundred per minute; while the respirations may be fifteen or twenty, or even forty, in the same interval of time. If the affected limb be examined, it will be found hot and swollen, and tender if pressed upon, which symptoms, for many hours, will gradually increase in intensity. Soon after commencement, a number of vessels may be seen running across the limb in various directions, of about the thickness of a quill; they are the most numerous, however, upon the inner surface of the leg, where they appear to terminate in round or irregular formed masses, which masses are acutely tender if squeezed within the hand; these prominent vessels are the inflamed lymphatics, and the prominent masses alluded to are the

inflamed lymphatic glands. Sometimes the swelling extends from the junction of the limb with the body down to the very foot; at other times it only reaches down to the hock, and when very severe, a sort of dew exudes from the skin and lies upon the hair.

The coarser the breed and the older the animal, the greater the liability to lymphatitis. Young, coarse-bred horses are also very prone to it, particularly if highly fed and under worked; but in the young horse, the disease, in the majority of cases, if not in all, quickly runs its course, and the affected limb becomes in time perfectly restored to its pristine condition, and if due precaution be taken, the malady may not again manifest itself, at least for years to come; while in old horses the diseased limb is seldom or never reduced—it remains permanently thickened, and the animal is extremely liable to have acute or sub-acute attacks of the same disease periodically. In the majority of cases, again, its action is usually confined to a hind leg, and that on the left side; sometimes both limbs are affected, but never, that I have seen, very acutely so at the same time; the left limb might be attacked, and some time afterwards the right one, but never both limbs simultaneously. I have also found that if the disease be treated according to the old mode, namely, by bleeding and purging, the horses so treated are prone to be attacked far more frequently than when treated homœopathically.

"*Causes.*—The predisposing causes are simple,

the chief of which are peculiarity of breed, and the regular giving of very nutritious food in too great abundance; also previous attacks of the same disease, old age, and the sudden changing of the animal from a poor to a rich diet. The immediate or exciting causes are—heavy blows upon the limbs; severe scatches or cuts; sudden over-exertion; working of the animal in water, or very wet ground; the sudden checking of old discharges from diseased limbs, such as grease, bad thrushes, &c.; allowing the animal to stand in cold draughts when perspiring freely, or checking the perspiration suddenly by riding him into a stream of cold water."—*Veterinary Homœopathy*, by Surgeon Haycock.

Treatment.—The best treatment the author knows of is, to apply diluted tincture of arnica externally, and give twenty grains of hydriodate of potassa twice daily.

ON THE GADFLY GRUB FOUND BENEATH THE SKIN OF THE HORSE.

"We know that the horse harbors several species of œstrides, or gadflies, in his body, of which those best known are the *œstrus equi*, and *œstrus veterinus*, and the *œstrus hæmorrhoidalis*, whose habitations are the stomach and intestines. But what we do not seem to be generally aware of is, that under the skin, even, *larvæ*, or grubs, of the

diptera family breed and give rise to the formation of tumors analogous to such as strike our notice, at certain times of the year, upon the bodies of our large ruminants; and particularly of those who appear, in all other respects, to enjoy the best health. Redi and Huzard (the father) have spoken of these inhabitants of the skin of the horse. Bracy Clark, likewise, has mentioned them in his *Essay on Bots*; but he regards them as identical with those of the *hypoderma* species which exist underneath the thick skin of the ox.

"Dr. Roulin, of the Institute, in his Researches on certain changes observed in Domestic Animals transported from the Old to the New Continent, expresses himself as follows: 'In the *hatos* of *Llanos*, the horses are almost entirely left to themselves. They are driven up only from time to time to keep them from becoming quite wild, to take off them the *larvæ* of the œstri, and to mark the foals with a red-hot iron. To what species do these American *larvæ* belong? As yet we remain in ignorance of this.' Last of all, M. Loiset, a celebrated veterinary surgeon of the Department of the North, published some years ago, a short *Notice of the Œstrus Cuticolens* of the horse, and has given a description of the *larvæ* of this œstrus, of which we have, according to the text, made a full copy.

"At the present day, with nature herself before our eyes, we feel satisfied that this description, confessed to be imperfect even by the author himself,

viewed as a branch of natural history, is wanting in exactitude. And this induced him to introduce a portrait of the insect in question, with a fresh description of it more in accordance with the rigorous precision prescribed by science.

"Its character once well established, we shall be able readily to resolve the question, whether the œstrus in point be identical with the *hypoderme of the ox*, or whether it constitutes another species to be added to the genus *hypoderma*.

"The *larva cuticolens* (skin-habitant grub) of the horse has a cylindrical form, measuring more round in its fore than its hinder part. It is without brain or feet. Its body is constituted of eleven segments, including the one in which is found the buccal orifice, (or mouth,) which consists of a very small hole, edged with a black border, with some bristles around so fine as to be with difficulty perceptible by the naked eye. The foremost segment is of all the smallest. From this the segments, as far back as the fifth, grow gradually larger; while, on the contrary, the five posterior continue to diminish as they approach the hinder part. These segments, examined upon their ventral surface, with the exception of the two last, are divided transversely, by slight grooves, into two unequal halves, each furnished with a great number of spinous tubercles, whose points, upon the anterior half of the segments, are directed backwards, but forwards upon the posterior half. Two cribriform plates, the

sole organ of respiration with which the grub is furnished, are seated upon a sort of flattened termination of the anal segment.

"Alike in this respect to the *hypoderma bovis*, the skin-habitant grub of the horse has, contrary to what is observed in the majority of cases, the inferior surface of the body convex, while the dorsal side of the segments is slightly concave. Such form is in this manner exactly fitted to the spherical cavity which serves as a habitation for the parasite. It is worthy of remark, that the dorsal surface of the body is without bristles, save upon the two or three foremost segments. The general color of the skin is white; the bristly tubercles alone being brown, more or less shaded. The skin itself is translucid and vesiculous, as it were. In size, the larva is much below the *hyperdoma bovis*, since it does not exceed an inch in length, while the larva of the ox œstrus, at full growth, attains to from three to four inches.

"This difference, in itself considerable, is not the only one we have to remark. Upon the subject of our inquiry we do not observe the six longitudinal lines which, upon the hypoderme of the ox, form so many series of tuberculous eminences, ranged at certain intervals from the first to the last segment. Neither are to be seen the five or six eminences surrounding the mouth of the latter; though to make up for it, we find the posterior and inferior side of the second segment a kind of transverse prominence

shooting beyond the surrounding skin, and furnished with very small tubercles, which have no existence in the grub found in the skin of the ox.

"These differences, united to those of size, suffice, in our mind, to authorize the conclusion, that the larva in question, though it belongs to the genus *hypoderma*, constitutes a distinct species, up to the present time undescribed, to which we shall give the name of *hypoderma equi*.

"No doubt we shall be asked, What are the habits of this insect in its different states? Nobody, as yet, that we know of, has investigated them. The larva alone being recognized, it is to that the few observations apply of which science is in possession. We know that this larva is found principally upon horses that have been living at pasture in the months of July and August, and that through its presence are caused large indurated knots or buttons upon the skin, which are found in the greatest numbers along the spine, from the withers to the croup inclusive. These buttons, whose volume varies from a lentil to a small nut, have, according to M. Loiset, a shape inclining to conical; and, by carefully separating the hairs closing them, may be seen on their summit a narrow aperture, resembling such as a large needle would make. Compressing the tumor causes to issue from this opening a minute quantity of purulent serosity, which, after being removed, is followed, in the last months of the growth of the tumor, by a

vesicular point, which is neither more nor less than the posterior extremity of the larva. The efforts made to expel this are ordinarily ineffectual up to the period at which its growth fits it for metamorphosis; when, by squeezing the pustule forcibly between the nails, a vermicular body springs livelily out, as though impelled by elasticity, and rolls upon the ground. This body is no other than the larva.

"There can be no doubt but that these larvæ feed upon the pus which forms in the tumors that serve them as habitations up to the moment of their transformation; neither is there any that the bristles clothing their body serve to augment the secretion of the pus through irritation of the skin, no more than there is doubt that the animal makes use of them, like the hypoderma of the ox, for the execution of the motions required for his escape from his foul abode. Once at liberty, he sets out in search of shelter either in the earth or the dung, and therein, after having remained for ten or eleven months underneath the horse's skin, it changes into fly.

"The larva that has been engaging our notice is comparatively rare in the south, but frequently found in the northern parts of France; it is likewise common in Belgium and Holland, along the entire shore of the Baltic and the North Sea.

"Save the phenomena already detailed, the cuticular larva of the horse occasions, according to M. Loiset, no appreciable morbid derangement. Never-

theless, about the period of its full growth, it appears to occasion some troublesome itchings, which give way to lotions of cold water, at times slightly vinegared, or else to some of the means employed for the destruction of the larva of the *hypoderma bovis*.

"How long does the state of fly continue? What are the habits of the insect after it has arrived at its final transformation? These two questions, as yet, wait for answers; but it is to be hoped they will not wait much longer. We have for guaranty of this the renowned seal of MM. the professors of our Veterinary School, touching all that concerns the interest of science of which those gentlemen are the worthy representatives."—*Translated by Mr. Percivall, from the Journal des Veterinaires du Midi.*

WOUNDS.

The treatment of wounds depends altogether upon their nature and cause. It is very difficult in the horse—although not so in man—to heal a wound by what is called "*first intention*," which means union by medium of coagulable lymph without suppuration. The definition of wound, technically is, a solution of continuity in the soft parts, produced by some mechanical agent. Wounds are divided into incised, contused, lacerated, punctured, and penetrating.

Incised Wounds.

Incised wounds are those inflicted by sharp instruments. On the human body they often heal without any subsequent inflammation beyond what nature sets up in the restorative process; but the difficulty of the horse is, that we cannot always keep the parts in contact, and therefore it is not so easy to unite them. In many cases, after having been at trouble to adjust by sutures the edges of the divided parts, and when all seems going on favorably, the animal gets his head round, and tears the wound open afresh, so that our labor is all in vain. This puts a damper on healing by *first intention.* There are several other difficulties in the way of healing by this method, well known to anatomists. We shall just merely refer to the principal one, because it may satisfy the reader that some wounds had better not be sutured, for they put the subject to a great deal of pain to no purpose. Horses, as well as some other animals, have, in lieu of hands, a peculiar muscular arrangement under the skin, by means of which they can shake off flies and other foreign bodies; and it is owing to the facility with which they can jerk or move the skin that we often fail in uniting flesh wounds. Other obstacles are to be met with, both in relation to the size of the wound and as regards its anatomical direction. If the wound is seen immediately after infliction, and there seems to be the least pro-

bability of healing by first intention, we place a twitch on the horse's nose, and examine the part. If there be found neither dirt nor foreign body of any kind, the blood had better not be washed off; for this is the best healing material in the world. The edges are then to be brought together by interrupted sutures, taking care not to include the hair between the edges of the wound, for that would effectually prevent union. Nothing more is needed but to secure the animal so that he cannot get at it. If he is to be kept in the stable, without exercise for any length of time, he had better be put on half diet. *Pure air will not hurt him!*

Contused Wounds.

These are generally occasioned by hooks or some blunt body connected with the harness or vehicle. They generally leave a gaping wound with bruised edges. We have only to remember that nature possesses the power of repairing injuries of this kind—of filling up the parts and covering them with new skin; all we have to do is, to attend to the general health of the animal, and keep the wound in a healthy condition. Our usual application is the compound tincture of myrrh. If the part assume an unhealthy aspect, a charcoal poultice will rectify that. If such cannot be applied, owing to the situation of the wound, dress it with pyroligneous acid.

Lacerated Wounds.

Lacerated wounds are generally in the form of a rent rather than cut, inflicted (as we have seen cases) by the caiking of a shoe tearing off the integuments and subcellular tissue, leaving a sort of triangular flap. In these cures we generally employ sutures, and treat them the same as incised wounds.

Punctured Wounds.

Punctured wounds are those inflicted by a pointed body, as a nail in the foot, point of fork, or splinter of wood. These are the most dangerous kinds of wounds, for they are frequently the cause of fistula and locked-jaw.

We make it an invariable rule, in the treatment of punctured wounds, to first examine by probe or otherwise, and remove any foreign body that may be present, and then poultice with flaxseed, into which we stir a small quantity of fir balsam. In puncture of the foot by nail, instead of plastering it with tar, and forcing a tent into the orifice, and then covering the sole with leather, as most blacksmiths are wont to do, we have the shoe taken off, the foot washed clean, and a moderately warm poultice applied, and renewed daily, until the suppurative stage commences. That once established, we consider our patient safe; for many men, as well as animals, have lost their lives from the absorption of

pus formed in the wound after the external breach had healed. When a bone is injured by the point of a nail, or fork, the cure is rather tedious; the primary means, however, are the same. The poultices may be followed by astringent injections, as alum water, &c. In case of injury to the bone, we use pyroligneous acid; to be thrown into the wound by means of a small syringe. If extensive disease of the bone sets in, the services of a veterinary surgeon will be required. A very profuse or unhealthy discharge from a punctured wound must be met by constitutional remedies. Sulphur and sassafras, to the amount of half an ounce each, every other day, to the amount of three or four doses, will arrest the morbid phenomenon. The local remedy in all cases of this kind is diluted ascetic or pyroligneous acid. For the treatment of a fistulous opening, see *Fistula*. For puncture of joints, see *Open Joint*.

Penetrating Wounds

Are inflicted by the horns of cattle, stakes, shafts, &c., and have to be treated according to the nature of the case. A penetrating wound of the walls of the abdomen is generally followed by protrusion of the intestine; this has to be returned; the wound is then closed by strong sutures, and the belly must be encircled with a long bandage. In such cases, we generally keep the bowels soluble with scalded

shorts, well seasoned with salt, and empty the rectum occasionally by enema.

Penetrating Wound of Intestine.

To illustrate the mode of procedure when the intestine is wounded, the following case is introduced: We were called to see a three-year old colt that had been gored by a cow. The animal had a wound on the off side, about four inches in length, in the iliac region, through which a portion of the small intestine protruded. On exploring the breach, it was found to run in a slanting direction, and as it approached the peritoneum, was found quite small, scarcely admitting the little finger; here the bowel was both strangulated and lacerated, the intestinal opening being external to the stricture. Before proceeding to cast the horse, a twitch was placed on the nose, and the edges of the wounded intestine were neatly sewed together with a very fine suture needle. Our reason for doing this before casting was, lest in the animal's struggles, the bowel might recede, and give us some trouble in getting hold of it again. There was not much danger of it, however; still we wanted to be on the safe side. The intestinal wound was not produced by the cow's horn, but took place some three hours afterwards, and two before we saw the case, in the following manner: the protruded bowel had become distended with gas, and according to the owner's account, was

about the size of his two fists. The animal, probably being in pain, got down and rolled on the injured side, and thus burst the gut. After sewing up the wounded intestine, it was cleansed with warm water, and attempts were made to return it within the abdomen, but to no purpose. We then cast the patient, and, by means of a bundle of straw on each side, propped him on his back; the bowel did not return so easily as we had expected, for it was found necessary to dilate the stricture by means of a button-pointed bistoury. The several layers of abdominal muscles were then sutured with as much nicety as the nature of the wound admitted; and lastly the integuments were brought together by interrupted suture. This case terminated unfavorably, for the animal died on the sixth day, from peritonitis. It may be well to observe that the accident happened on a very cold day, in the depth of winter; and the bowel being so long exposed to the depressing influence of cold, probably led to the fatal result; for it is well known that operations of this kind often prove successful. It may be interesting to the reader to know that wounds of the intestines heal as readily as those of other parts, as the following cases will show:

. An incision one inch and a half in length was made in the bowels of a dog; the wound of the integuments was closed by suture; the animal was scarcely affected by the operation, took food as usual, and had natural evacuations. At the end of

a fortnight, when perfectly recovered, he was killed for the purpose of examining the bowel, when the wound appeared to be perfectly healed.

In the eighteenth volume of the *Philosophical Transactions*, a similar experiment is related by Mr. W. Cooper: "An opening was made in the abdomen of a dog; a large wound was made in the intestines, and the wound in the abdomen was stitched up; the dog recovered without any bad symptoms, and became perfectly well in a few days after." It should be observed that the bowel does not appear to have been stitched up when returned into the belly. The following experiment by Mr. Travers is still more remarkable: "A ligature of thin packthread was firmly tied round the first intestine—*duodenum*—of a dog, so as completely to obstruct it; the ends of the strings were cut off, and the parts returned; the wound in the abdomen was closed, and the animal expressed no sign of suffering when the operation was concluded. On the following day he was frequently sick, and vomited some milk that was given him; his respiration was hurried. Third day his sickness continued, and he vomited some bilious fluid. Fifth day he passed a copious stool of the same appearance as the fluid discharged by vomiting; his sickness from this time ceased, and his breathing was natural; he took bread and milk, and drank abundantly of water. Seventh day he had three similar evacuations, and appeared well, eating animal food freely.

On the fifteenth day, his cure being established, he was killed for the purpose of examination. The ligature which was fastened around the intestine divided the interior coats of the gut, in this respect resembling the operation of a ligature upon an artery; the peritoneal or outer coat alone maintained its integrity. The inflammation which the ligature induces on either side of it is terminated by the deposition of a coat of lymph, exterior to the ligature; this quickly becomes organized; and the ligature, thus enclosed, is liberated by the ulcerative process, falls of necessity into the canal, and passes off by stool."—*Travers on Injuries.*

Penetrating Wounds of the Chest.

Wounds of this character are not fatal, provided the lungs or heart are not perforated. All that can be done is to suture the wound, pass several turns of a roller round the chest, and adopt such constitutional means as the case seems to require.

SPRINGHALT.

This peculiar spasmodic affection of muscles in the hind extremities is not so common among American horses as it is among the French and German breeds. It is an affection over which the veterinary surgeon, armed with the whole *materia medica,* has very little power; for, in the nervous

system first originates the cause, which subsequently gives rise to the peculiar gait termed springhalt; and the practitioners of all creeds have acknowledged their inability to direct medicine to the nervous structure, even after they have secured its digestion in the stomach. To introduce medicinal agents into the latter is an easy matter; but to make them reach that wonderful and delicate organized substance, the brain and its nervous filaments, is another affair. These remarks, however, apply to cases of springhalt depending on some *lesion* of nervous filament, pressure, or *atrophy* of the nerves of nutrition. Minor derangements, resulting in spasmodic action, may be relieved by removing the cause or the morbid habit which induces them. To do this, our treatment must be general; that is, we must restore healthy action to the whole animal structure, and remove obstructions wherever they exist.

Before alluding to the treatment, we shall introduce to the reader's attention a selection from Mr. Percivall's lectures, delivered some thirty-five years ago; and, if the reader will compare that author's views with those of the surgeons of the present day, he will find that they have nothing new to offer.

The distinguished lecturer on veterinary science remarks: "We need give no description of the action or peculiar gait of a horse said to have springhalt; the greatest novice easily detects it, and seldom fails to make objections to purchase an animal thus

affected. Mr. Feron, one of the few writers who have noticed springhalt, says, 'I am convinced, however, by long experience and observation, that springhalt, as it is called, is no disease, therefore can require no remedy.' And in another place, 'Indeed, in Spain, France, and Germany, *it is esteemed extremely graceful in their riding schools, or manege, particularly when there is a springhalt in both hind legs.*' This writer has, however, admitted it to be a disease, to the full scope of the word, in the very outset of his description, by defining it to be 'an involuntary convulsive motion of the muscles, which extend or bend the hock.' In some particulars, springhalt bears some affinity to what, in human medicine, is called *chorea.* We do not mean, however, to assert that they are essentially the same disease; much less do we imagine that a similar mode of treatment could have any good effect; all we wish to infer by such an analogy is, that they are both spasmodic or convulsive diseases, in which the will has lost more or less of its control over certain voluntary muscles. Not unfrequently, when the animal has lifted his hind leg from the ground, which is always done with a convulsive twitch, the fetlock nearly approaches the belly, and, by some other remarkable irregularities in its action, before the foot can be replaced upon the ground, (which it seldom is in the most advantageous position,) displays such unnatural movements as to convince us that volition has but little power over it

during its suspension. Sometimes this irregular action is confined to one leg but; we believe that it is more commonly seen in both. It is seldom or never removed.

"Such writers as offer any opinion of its nature suppose it to be a muscular affection, mistaking, we conceive, the effect for the cause. We choose rather to refer its seat to the spinal marrow, or to the nervous trunks passing between it and the affected muscles; an opinion we were first led to adopt from having observed a broken-backed horse exhibit all the characteristic signs of springhalt, which in this case was clearly only an accompanying symptom of the former disease. It was stated in the foregoing part of this lecture, that section or compression of the spinal marrow paralyzed muscles, and that irritation of it convulsed them. Now, we know that many cases of broken back terminate in palsy; and, if this be true, why should not others be productive of springhalt—since the one arises from compression, while the other is merely the result of irritation? It is not, however, necessary that a broken back be present; for any other cause of irritation, we apprehend, would induce this disease. Horses are very subject to injuries of the loins—much more so than we seem to be aware of—from being suddenly stopped or turned, or from being overweighted about those parts; accidents that are but too seldom detected, since they may not be severe enough to constitute broken back, though

they may so far disturb the nervous functions as to cause springhalt. Should the injury, or the consequences of it, be confined to one side, then only one column of the matter will be affected, and but one leg convulsed; the nature and extent of disease in it will perhaps determine the degree of springhalt.

"Such is our theory of a disease whose nature, we believe, has up to this time remained unexplained; whether we have taken a correct view of it, experiment and special attention to these cases in future can alone decide. We have long had it in contemplation to attempt to induce springhalt by artificial means; and we intend, as soon as an opportunity presents itself, to institute some experiments for this purpose.

"We so seldom know anything of the origin and progress of these cases, and, even if we did, they have generally endured so long that it would be labor lost to treat them. Should, however, a recent case present itself, in a horse of value enough to render his recovery an object of consideration, we may pursue such means as have been recommended in the equally hopeless one of broken back."

Regarding the Treatment.—It will be proper, when the attack is sudden, to let the horse rest; for in a sudden attack, we might naturally suspect that some injury, either by blow or strain, had been done to the nerves of voluntary motion: in that case, cold water bandages (around the body), rest,

light diet, nauseating medicines, with an occasional light dose of cathartic medicine, to clear out the bowels, will be indicated. Fomentations, light frictions with anti-spasmodic liniment, and the vapor bath, may assist materially in the recovery of the patient.

In chronic cases of long standing, all hopes of recovery must be abandoned: should the subject, however, be in a state of debility, the general health may be improved, and the spine should be daily rubbed with embrocations calculated to restore nervous energy; in this view, we recommend the following embrocation for springhalt:

Linseed oil, one pint; spirits of hartshorn, two ounces; fine mustard, one-half ounce. The medicine to consist of—Powdered goldenseal, powdered gentian, cream of tartar, and charcoal, each one ounce; assafœtida, one-half ounce. Mix, and divide into eight parts, one to be given morning and evening, in the food.

FALLING OFF OF THE HAIR.

There are various forms of eruptive diseases which induce a falling off of the hair; and these external eruptions which appear on the skin are not always the disease, the real enemy to be overcome, but are oftentimes the manifestations—products or symptoms—of some internal affection. So soon as the eruptive disease extends to the hair bulb, a sort

of morbid action commences within them, which loosens the hair, and it falls off.

At times we find small vesicles which are elevated above the skin, often in very considerable numbers; they pour out on the skin a fluid, which, by the process of evaporation, forms crusts; these crusts are sometimes converted into minute ulcers, which deepen until they destroy the roots of the hair. They generally produce intolerable itching, which obliges the animal constantly to rub himself, and thus destroy the hair. The eruption sometimes occupies a single spot, which soon extends so as to cover a large space; sometimes it appears on the tail, at others on the neck and on the flanks, whence it gradually extends. This form of eruption is called *humid exanthema.* There is another form, known as *dry exanthema,* which appears in the form of small pimples; they soon scale off, and the place they occupied is covered with a farinaceous powder. The animal seems to suffer the most excruciating torment, and is constantly rubbing himself. The best local remedy for either case is,—

Pulverized charcoal, one ounce; olive oil, one pint; pyroligneous acid, five ounces; common salt, one ounce. Mix, and lubricate the parts daily with a sponge.

The internal treatment should always commence with small doses of sulphur, sassafras, and bayberry bark, given occasionally in the food.

RINGWORM.

Ringworm presents itself in the horse in the form of circular, and sometimes irregular, patches denuded of hair, having on their surfaces a morbid secretion, and incrustations of the same. It generally locates on the sides of the neck, and occasionally on other parts. The skin of the animal presents a few round and raw-looking spots completely denuded of hair; they are present on both sides of the neck, and also upon the skin of the left cheek. Upon the skin on both sides of the neck, upon the superior part of both shoulders, upon the back, in the region of lumbar vertebræ, and particularly upon the hind quarters, are a number of peculiar-looking spots or patches, each of about the size of a shilling. The appearance which these patches present is somewhat as follows: Some of them are round, while others are of an irregular form. The hair in connection with them is of a dirty gray color, and it appears as though a portion of fine dust had been placed upon it, and then a gummy fluid had dropped amongst the whole, and, being allowed to dry, had become incrusted. If the forefinger is placed firmly upon any one of these patches, and at the same time forced forward, the incrusted mass slides, as it were, away from its *matrix*, and a raw surface is exposed to view, in which, if examined with a common magnifying lens, a number of pits or

cavities are observed, some of which are filled with purulent matter; while running, as it were, around these cavities, is a red continuous line of variable thickness. The incrustations were found to consist of the hair agglutinated together, from the presence of a gummy substance excreted from the diseased part beneath.

Treatment.—Wash the parts with a strong infusion of bayberry bark, wipe dry, and then smear the denuded spots with a mixture of four ounces of pyroligneous acid, and one ounce of turpentine. Ths washing and dressing to be repeated until healthy action is established. If the disease does not readily disappear, give equal parts of sulphur, cream of tartar, and sassafras, in doses of six drachms daily. If the disease still lingers, sponge the denuded parts with tincture of muriate of iron.

GLANDERS.

Many valuable horses have been sacrificed by ignorant persons, being pronounced glandered simply because they have a discharge from the nostrils, accompanied by enlargement of the maxillary glands. In glanders, it is the lymphatic, sub-maxillary glands that are affected.

Mr. R. Vines, V. S., says: "All the symptoms of disease which constitute glanders and farcy invariably depend on the unhealthy state of the system into

which it is reduced or brought, and not, as is supposed, from a specific poison contained in the blood; and these symptoms of disease are found to depend on and arise from a variety of causes; whether they occur at the latter states or stages of common inflammatory diseases, such as strangles, common cold, distemper, disease of the lungs, dropsy, &c., or whether they arise independently of such causes; for when the system is brought into an unhealthy state, and is more or less debilitated from neglect, or by the improper treatment of any of these diseases, farcy or glanders is the result. The diseases of every animal will, therefore, assume a character according to the state of the system."

Mr. Percivall, V. S., says: "The state of the body, or constitution, will always have considerable influence on the character and tendency of disease. In horses whose bodies are and long have been in an unthriving and unhealthy condition, a common swollen leg will occasionally run into farcy, and a common cold or strangles, or an attack of influenza, be followed by glanders. In other cases, such unfortunate sequels supervene without any ostensible or discoverable cause."

Treatment.—Inject the nasal passages daily with pyroligneous acid. Let the diet consist of equal parts of wheaten flour and oatmeal; the drink of water adulterated with elixir of vitriol, eighty drops to the bucket. The medicine must possess the following properties:

1. *Antiseptic.*—To preserve the system from putrescence. The principal one is pyroligneous acid; dose, one ounce twice a day, in a pint of sage tea.

2. *Alterative.*—To change morbid action. The following is an example:—Take of phosphate of lime, one ounce; powdered sarsaparilla and powdered sassafras, each five ounces; powdered assa-tœtida, one ounce. Mix, and divide into twenty-four powders, one to be given, night and morning, in thin gruel.

3. *Stimulant.*—To arouse vital action, the chief are capsicum and ginger. The following preparation has been used with considerable success:—Iodine (reduced to powder), four scruples; proof spirit, four ounces; tincture of capsicum, or ginger, six ounces. Dose, one ounce twice a day, in thin gruel.

Occasionally a drench should be used of brandy and salt,—three ounces of brandy to one ounce of salt.

RAT'S TAIL.

Rat's tail is a name given to a narrow streak of denuded hair which occasionally appears on the upper part of a horse's tail. It generally arises from a sort of exanthema, or cutaneous eruption, causing an intolerable itching; the horse is constantly rubbing the part against the side of his stall, and thus the pilous covering is worn off.

The remedy is—Spirits of turpentine, pyroligneous acid, and linseed oil, in equal parts. Wash the parts daily, and dress with the mixture.

MALANDERS AND SALANDERS.

The above terms are usually applied to scurfy eruptions, accompanied with oozing crusts and cracks in the skin, situated either in front of the hock or at the posterior part of the knee joint. They probably produce some sort of an itching sensation; occasional pain, and even lameness, have been known to arise from them.

The disease is said to arise from long traveling on bad roads, want of cleanliness, &c.; but probably it originates from that peculiar state of the system which favors the production of cutaneous diseases. The disease does not prevail to any great extent in the United States.

The term *malanders* is applied to the disease when the fore legs are affected, and *salanders* when it is located in the hind ones. As both are supposed to proceed from the same cause, the local treatment consists in washing the parts twice a day with an alkaline wash—lime water or saleratus; and after the part or parts are wiped dry, the following application must be used: Beef's gall and spirits of turpentine, equal parts of each.

WINDGALLS.

The bursal capsules located just above the fetlock, as well as in the vicinity of the hock, secrete a synovial fluid, corresponding to what some persons term "*joint oil*," the use of which is to facilitate motion. In cases of this character, either the walls of the capsule are hypertrophied—augmented in bulk—or the synovial secretion is inordinate, or else its flow is obstructed. Counter irritation, bandage, friction, and regular exercise, are the best remedies, and yet they often fail to remove the eyesore.

SPLENT.

A splent seldom occasions lameness, except in the primary stage of inflammation of the fibro-cartilaginous substance which unites the splent to the canon bone; or, in cases when the splent is high up, in close proximity with the *carpal* bone—which rests on the upper part of the inner small metacarpal—splent sometimes involving more than one of the carpal bones; and from the size of the tumor, it being large, having a very rough surface. In such cases we may expect lameness; but it seldom lasts long, for the bones soon become anchylosed, that is, glued together; and should the tumor be rough, so as to produce lameness, there will soon be thrown out on its contiguous tissues a fibrous

layer, which to some extent prevents friction. This form of splent, having eminences, depressions, and a rough, irregular aspect, may be denominated tuberculated splent: it generally interferes with the motion of neighboring parts. A splent of the circumscribed kind—a tumor about midway between the superior and inferior ends of the canon, on the inside—generally differs from the above, in presenting a smooth eminence, with a well-defined outline, varying in size from that of a bean up to a walnut.

Cause of Splent.—A good deal of speculation is afloat as to the cause of splent. We are aware that it may be produced by a blow, or injury in the form of sprain. If it come from a blow, we should be apt to consider that the animal himself was the cause of it, by *striking* with the opposite foot; although he generally strikes the fetlock, or else the inside of the knee; but he may once in a while have an ill-adapted shoe placed on his foot, and then, in consequence of being reined up suddenly, or getting one foot into a hole, may, without the knowledge of the person riding or driving, inflict a slight blow on the inside of the limb, which may prove, in a predisposed subject, the exciting cause of this affection. Predisposition may lurk in breed; and from the fact that many animals are now to be met with carrying about with them miniatures of ancestral deformity, *spavin*, *ringbone*, &c., we may presume that splent, at times, comes under this category.

Treatment.—In the early stages, supposing some inflammatory symptoms present, we resort to cooling, evaporating lotions. These are various. The following will probably answer the purpose. It has been used extensively and found efficient:

Take of acetic acid, two ounces; water, eight ounces; and chloric ether, one ounce. Mix; take a pad composed of three or four folds of cotton cloth, immerse it in the mixture, place it over the seat of splent, and then confine it, so as to produce a slight pressure on the tumor, the outer bandage to be moistened as often as convenient. Rest at this stage is highly important, because the *periosteum*, or else the *interosseous* fibro-cartilage between the splent and canon, is inflamed, and all motion aggravates it.

In a case of long standing, and even in one having a well-marked tumor, stiffness and lameness may be relieved by the occasional application of *acetate of cantharides.*

Some surgeons blister for the cure of splent; others saw off the tumor; and periosteotomy has been resorted to in view of cure; but, unfortunately, splent is no more curable than spavin, when once the cartilage is converted into bone; and as in the majority of cases it is but an eyesore, and detracts but little from the value, and still less on the score of usefulness, of the horse, it may be well to pause ere we *operate* for the cure of an incurable disease.

CURB.

A curb is an enlargement which makes its appearance on the hind legs, about two inches below the hock. It is sometimes occasioned by a blow; but the most frequent cause is strain of the sheath through which the flexor tendons pass. If seen in its early stage it would, in all probability, yield to rest and cold water bandages. But if neglected until effusion takes place, or the surrounding tissues become injected and thickened, and the horse becomes lame, then a different course of treatment must be adopted.

Take of acetic acid, four ounces; powdered bloodroot, one ounce; turpentine, one ounce. To be applied to the part night and morning for at least a week; afterwards to be bathed daily with common vinegar.

There are cases, however, in which coagulable lymph will form, and may thus leave the parts in a state of callosity for some time, which only patience, constant friction, or the application of some stimulant can overcome. Among the many applications in use the following is preferable:

Take of oil of cedar, oil of sassafras, oil of marjoram, one ounce each; soft soap, one pint. To be used daily, always rubbing in a downward direction.

As regards exercise, the inflammatory stage requires rest; and in the chronic form, exercise will be indicated, provided, however, the horse be not lame.

MANAGEMENT OF DISEASED AND DEFECTIVE HORSES.

Young Horses are not at full strength till they are nearly five years old. At fast work they require careful shoeing to prevent cutting, careful stable-management to prevent the evil arising from changes of temperature, to which they are more liable than mature horses. They are not fit for full work, but they require good feeding for what they do.

Old Horses, those above ten or twelve, are rarely fit for long stages. They are soon exhausted. They need full feeding; and some, having bad teeth, need to have much of their food broken or cooked.

Defective Fore Legs last longest in harness and in the lead; but when the horse is apt to fall, when he is a notorious stumbler, he is better in the wheel. The other horse helps to keep him on his feet.

Roarers do most work when their work is slow. Some cannot go above five miles an hour: and many cannot go more than four miles, when the pace is near eight per hour. Some do better on one side of a coach than on another. The head should not be confined by the bearing-rein, and the throat-lash should be loose. Time should be given in up-hill work, otherwise the roarer may choke and fall. He should work with little food in the belly; the first mile is sometimes the worst for him; a slower pace for the next half mile enables him to finish the remainder with less distress than when he is pushed from the start.

Chronic Cough, that is, a settled cough, is very common among fast-workers. It is most frequent when the horse is taken from the stable, when he returns to it, and after drinking and feeding. There is no cure. Occasionally a mild dose of physic; and after severe work, or much exposure in bad weather, cordial balls soften and mitigate the cough. Many horses have it for years without any apparent evil, but it often produces broken wind. Carrots and boiled barley are good. The work should be regular.

Broken-winded horses require regular work, regular feeding, and a rich concentrated diet, consisting of oats, beans and barley in large measure, with a limited allowance of fodder. Wheat straw seems better than hay for these horses. From six to eight pounds is sufficient, if the work be fast; when slow, there is less need for restriction; carrots and boiled barley, one or both, may be of use. Bad food seems more injurious to broken-winded than to healthy horses. They drink much water, and before work they should not have so much as they would take. At night no restriction is necessary. Broken-winded horses are rarely fit for more than an eight-mile stage, to which they need an hour. But there are various degrees of the disease, some being much worse than others.

Crib-biters are horses who swallow air by a peculiar effort. They seize the manger or any other fixture with the fore teeth, arch the neck, and gulp

over a quantity of air, making, at the same time, a grunting kind of noise. Horses often learn this from others: they should stand alone.

When the crib-biter swallows so much air as to enlarge his belly, to incommode his breathing, make him liable to frequent attacks of colic, or keep him lean, a broad strap may be put on the throat, tight enough to prevent dilatation of the gullet, yet not to stop the return of blood from the head.

There is a kind of muzzle sometimes used for the purpose of preventing crib-biting among valuable horses. Its most essential part is a kind of rack, consisting of two iron spars jointed at each extremity, and curved to receive the muzzle. The spars are about three-fourths of an inch broad; the space between them is wide enough to receive the lips, and let them seize the grain and hay, but so narrow that it will not admit the teeth. The horse can eat well enough; he can reach his food with the lips, but he can seize nothing with his fore teeth. This muzzle is better than a strap, which disposes the horse to swelling of the head, and is blamed for producing roaring.

Wind-sucking consists in swallowing air without applying the teeth to any fixture. The horse presses his lips against the edge of the manger, having his neck and back arched, and his feet all gathered together. This habit does not seem to be so often injurious as crib-biting. It is said that a muzzle, having three or four sharp spikes at the

bottom, will prevent it. The points run into the lips when the horse attempts to place them in position for sucking or swallowing air.

Megrims (or Epilepsy).—Some horses are liable to giddiness at work. It is not the same as choking or swooning in the collar. It seems to be a kind of apoplexy. The horse drops without the least warning, lies for a few seconds insensible, and then rises somewhat confused. After two or three attacks the horse is sure to have more. Saddle-horses are not exempt. These horses should be kept at slow work in double harness. Their work and feeding should be always the same. Excess or deficiency of what they are accustomed to renders the attacks more frequent. Physic may be given thrice a year or oftener. The food should never be constipating. The bearing-rein should always be free. If the horse be observed to stagger, he should be pulled up, and allowed to stand two or three minutes. When he falls he requires nothing but time to recover his senses.

Blind Horses should not be placed within reach of a mischievous neighbor. They cannot defend themselves nor get out of the way. In harness the wheel suits them better than the lead. When only one eye is lost, the horse should work on the side from which he sees.

Glandered Horses often work for years after they are incurably diseased. They require to be well fed, well lodged, and well groomed. So far as my

experience has gone, medicine of all kinds is entirely thrown away upon them.

When the disease appears in a sound stud, the horse should be destroyed, or at least removed without delay. It is possible he may recover; and, if he can be kept where he can do no harm, he may have a trial. If permitted to remain, he is just as likely to give the disease to every horse in the stable as to get better himself. It is generally supposed that glanders cannot be communicated without actual application of the matter. This is not certain. I am pretty sure that, in some forms, it will spread through the air. It is prudent to suspect and watch every horse that has breathed under the same roof with a glandered one.

When several are diseased, it may be worth while keeping them. They may be all put to one road, and kept in stables apart from the others; having men, harness, pole, and pole chains entirely to themselves. When it can be managed, they should not even enter the stable-yard where there are sound horses, and the men should be carefully excluded from every stable but their own.

When the horses die off, so that sufficient are not left to do the work, their place may be supplied by others, sound, but of little value. In this way, however, the disease is kept up. It is better to destroy the few that remain. Let the stalls, every portion of the stables, from floor to roof, both inclusive, be well washed with soap or sand and water.

Let the wood-work be scraped or planed, and ragged portions chipped quite out. If the mangers and racks be of wood and much wasted, remove them altogether, and replace them by others of iron. After washing, give all the stone or brick a coat of hot lime-water. Till all this is well and completely done, no sound horse should enter the stable; and even after it is done, the stable should stand empty for a week or two.

Sickness.—This word is usually applied to all dangerous or febrile diseases, all in which the horse is dull, pained, and without appetite. The stable-management of these must vary according to the nature of the illness. Directions are given by the medical attendant as to diet, drink, ventilation, clothing, exercise, and other matters likely to exert any influence upon the disease. In general, bran-mashes, carrots, green food, and hay form the sick horse's diet; gruel or tepid water, his drink. Whatever the surgeon's orders, they should be strictly obeyed. In many cases a handful of oats or a bucket of cold water may keep the horse a week longer from work, or even kill him.

Bleeding.—After a horse has been bled from the neck, let his head be tied up for at least three hours; and if there be no objection, it had better be tied up all night. Never tie it higher than the manger. If the horse happen to faint, as some do after a bleeding, he may be choked. The head is tied high enough when the horse cannot get it lower than the

bottom of the manger. Never remove the pin and tow by which the vein is secured. They will fall away in a few days; but though they should remain for eight or ten, they will do no harm. If removed too soon the vein is apt to inflame. It is best to let them remain.

Fomenting.—In fomenting for lameness or an external injury, the groom rarely has enough of water, and he does not continue the bathing long enough to do any good. If the leg is to be fomented, get a *pailful* of water as hot as the hand can bear it; put the horse's foot into it, and with a large sponge lave the water as high up as the shoulder, and keep it constantly running down the whole limb. Foment for about half-an-hour, and keep the water hot by adding more. If a poultice or wet bandage is to succeed the fomentation, apply it immediately, before the leg has time to cool.

Poulticing.—Warm poultices are usually composed of bran-mash, to which it is proper to add turnips, linseed-meal, or oatmeal porridge; either will do, and one of them is necessary, for bran alone does not retain heat and moisture sufficiently.

Whether applied for sores, bruises, or sprains, the poultice should be large, moist, and as warm as possible and convenient. It is almost invariably too small; it should cover a good deal more than the part injured. It should have as much water as it will hold, and more should be applied every second or third hour, either by pouring it on the

poultice or by dipping or soaking it. Care must be taken that no part of the cords or bandages be too tight. They should admit the finger quite easily after they are all adjusted. When properly applied and properly attended, a good poultice need not be changed in less than twenty-four hours. When the horse tears it off with his teeth, he must be tied up; when he paws or throws it off, he must be shackled.

When too small, a poultice does little good; when too dry, it confines heat, and increases inflammation; when the strings are too tight, they stop the circulation of blood, cut the skin, and swell the leg.

Blistering.—Blistering plasters are never applied to horses. We always use an ointment, of which rather more than a half is well rubbed into the part to be blistered, while the remainder is thinly and equally spread over the part that has been rubbed. When there is any danger of the ointment running and acting upon places that should not be blistered, they must be covered with a stiff ointment made of hog's lard and beeswax.

The bedding is to be removed when the leg is blistered. To prevent the horse from slipping upon the stones, they may be covered with a little short litter, sawdust, or bark.

The horse's head must be secured in such a way that he cannot reach the blister with his teeth. Put him into a narrow stall, and tie his head firmly to

the rack. When a hind-leg is blistered, fasten a small bundle of straw to each heel-post; place it high up, opposite the haunch. It keeps the legs off the posts, against which the horse is very apt to rub them.

When the blister has become quite dry, the head may in general be freed, and the horse let down. But sometimes it remains itchy after it is dry, and the horse rubs it. In that case he must be tied up again. If he get very tired, and threaten to go down on his haunches, put the beads on his neck, let go the head, give a good bed, and let the horse rest all day, a man watching him if the beads are not sufficient to keep away the teeth. At night he may again be tied up, if there be any fear of his rubbing the blister.

When the blister is quite dry, put some sweet oil on it, and repeat it every second day. Without orders from the veterinarian, the blister is not to be washed off, either soon or late. Give it plenty of oil and time, and it will fall off as the new hair grows. By washing, the raw skin is often exposed, the hair torn out, and the horse is blemished.

VERTIGO.

Horses are, now and then, attacked with a sort of giddiness, which is apt to come on while going fast; the animal all at once commences shaking his

his head, staggers, reels, and stops short; if permitted to rest awhile, he recovers, and travels on as if nothing had happened.

The vertiginous symptoms are very apt to return; therefore a horse having once had an attack, must be managed with caution; he is certainly unsafe for either saddle or chaise; but with due care in regard to stable management and work, he might be used with some degree of safety in a four-wheeled vehicle, for, if he then should fall, the occupants might escape without injury; otherwise they would not. The disease is generally supposed to be connected with some pathological state of the brain or nervous system, and must therefore be considered incurable so long as that organ or system remains in a pathological condition.

The treatment of vertigo, or megrims, as it is sometimes called, does not reflect much credit on us, neither is it at all times satisfactory to our employers; for so soon as the horse returns to work, the same causes which produced a previous attack are again in operation, and soon produce a subsequent one. Our first object is to act on the digestive surface by means of a full dose of physic. Some mustard, moistened with vinegar, should be rubbed along the neck, on each side, near the head. Some practitioners recommend setons through the temples, or along the nape of the neck; others blister the head. Bloodletting is generally resorted to for most diseases of the brain; with what success the

reader may learn by consulting the text books. The practice, however, lacks the sanction of the new school and our own humble advocacy. We have seen some benefit derived from the daily use of an antispasmodic draught, composed of powdered gum asafœtida, one drachm; sweet spirits of nitre, two drachms; thin gruel, one pint. To be given so soon as the bowels have responded to the purge, and to be continued until the patient appears better.

This treatment we have found efficient to prevent a re-attack for a longer or shorter time, depending, however, on the manner in which it is kept and used. Good grooming, light diet, clean stables well ventilated, and light work, are among the best means for warding off an attack of this, which is generally considered an incurable disease.

"By vertigo is meant a chronic disease of the horse, chiefly indicated by a disturbance of the sensitive faculties, oocasioning derangement in the ordinary functions of life. Much that is incorrect has been written regarding the seat, properly so called, of the evil; at present, most veterinary surgeons are agreed in seeking the proximate cause, not as formerly, in the brain, but in the abdominal organs, and in considering the cerebral affection as purely secondary. The vertigo often succeeds acute encephalitis, the intensity of which has diminished to a certain degree; but very frequently, also, it comes on without having been preceded by inflammation of the brain. It recognizes the same causes

as the latter, isolation, confinement in hot and badly aired stables, cold, extreme fatigue, blows and injuries on the head, indigestion, unwholesome or too much food in proportion to the exercise taken. The fear of punishment, especially of the whip, occasionally gives rise to it in sensitive and irritable animals. Some horses have an hereditary predisposition to it, and mares are considered more subject to it than stallions. Further, it is scarcely ever observed except in hot weather, and as it is generally at the beginning of summer that it commences to appear, it goes away always in autumn, at least with respect to its chief symptoms. These are the following: the horse, a little before lively and active, begins, all of a sudden, to appear heavy and indolent; he is dejected, and prefers to keep himself in the darkest corner of the stable, eyes dull, look fixed and stupid, eyelids half shut, inattention to every thing, forgetting even himself, and, as it were, asleep, and head hanging to the ground, and resting on the manger or on the rack. His gait is heavy, slow, and unsteady; he raises the feet very high, and puts the entire sole to the ground, raising and letting down the limbs in a manner purely mechanical, and, as it were, unconsciously. He exhibits much awkwardness in turning, and cannot be pulled back except by depressing the head very much, and pushing it laterally. Generally, also, he leans on one side in walking. To maintain his equilibrium the better, he places the fore legs beneath the belly, and

moves his ears in a peculiar manner, and backwards. According as the disease progresses, he becomes less and less sensible to external impressions; mastication is performed slowly; he takes from time to time a mouthful of food, masticates it, swallows a portion of it, but keeps the remainder in his mouth. He prefers taking his food off the ground rather than in any other way, and when drinking, he plunges his head into the water, even above his nostrils. During and after some rather violent movement, his symptoms become much aggravated, and the signs of complete insensibility become more and more marked. The animal runs on quite blind till some obstacle stops him, or turns round, or remains tranquil, when, with his head depressed, and the legs crowded beneath the body, without being able to change this unusual attitude unless assisted to do so. There is never any fever; the pulse is often from ten to twelve pulsations slower than in the normal state.

"In the same way, also, the respiration is constantly slow, deep, and frequently of a sighing character. In almost all cases the tongue is foul, and the mouth dry and clammy. With respect to treatment, the remedies which have succeeded best with me are camomile (some doses), then sulphur, and nux vomica. In a peculiar case, where, independently of the symptoms peculiar to vertigo, the conjunctiva, tongue and mouth were more yellow, the horse frequently flexed his fore legs, seldom lay

down, fæces hard, and passed but little urine. I obtained benefit from the use of nux vomica, with sulphur as consecutive treatment. Others used pulsatilla in general: however, they also obtained good effects from veratum album in many cases; nux vomica was employed with the horse inclined to the left, and arnica when he leaned to the right. Several horses have been cured by means of belladonna: and one, which was considered as lost, was saved by giving him belladonna, hyoscyamus and nux vomica. The utility of digitalis and opium has been verified in slight cases of vertigo, in which cases benefit has been derived from arnica. On one occasion, veratrum album was prescribed during four days, twice a day, and then stramonium, employed in the same manner; on the fifth day the animal was cured. It is always advisable to have recourse to sulphur as consecutive treatment."—*Veterinary Homœopathy*, p. 127.

JAUNDICE.

Definition.—A yellow discoloration of the tissues, caused by an interrupted excretion of bile.

On making a post mortem examination of animals having been the subjects of this disease, we find the yellow tinge prevading every part of the organization. It is diffused through the whole of the muscu-

lar, fatty, cartilagenous, cellular, bony structures, and has also been detected in the brain.

Mr. Percivall considers "jaundice to be an unfrequent disease among horses; and one reason appears self-evident, as soon as we are put in possession of a knowledge of the causes from which it may proceed. I mentioned swelling or compression of the hepatic duct as one, in speaking of it as a sympton of hepatitis; and probably this is the most common one. In the human subject, it frequently arises from obstruction of the ducts, either from collected or concreted bile in them, to which the name of *biliary calculi* is given; or it may be the effect of spasm in the ducts, or in any part of the duodenum where they terminate; but I am not aware that cases of this kind have occurred in veterinary practice; and one reason I repeat, is obvious. The horse has but a single duct, through which the bile flows as fast as it is secreted; it has no retrogade course to take, no receptacle to collect in and to concrete into gall stones; and, as a proof that this is one reason, dogs, and such other domestic quadrupeds as have gall bladders, are all of them much oftener jaundiced than horses. People who lead sedentary lives, such as corpulent subjects and women, are predisposed to jaundice; in them the bile often grows inspissated in its ducts, and biliary calculi are now and then detected in the stools: this is a cause of disorder, as I have said before, that we can but rarely adduce in veterinary practice.

"Jaundice, produced from whatever cause it may be, consists in the absorption of unchanged bile into the circulation, which bile becomes diffused and conveyed to every part, giving rise to those appearances that are so remarkably characteristic of its presence. It does not appear to originate either in defective or altered secretion; for had not the liver done its office, how could we explain the appearance of bile in the system at all?

"The yellow aspect that jaundice gives to the skin, the mouth, and the eyes, at once betrays its presence. The skin is every where dyed yellow, though the change is only visible to us in places bare of hair. The membrane of the mouth puts on the same appearance. The conjunctiva (the membrane lining the eyelids) has a yellowish pink hue, the cornea is obscured, a yellow sediment may often be perceived floating in the anterior chamber, and the iris itself is tinged in places with this yellow dye. The bowels are costive; the excrement that is voided is hard, *buttony*, and dark-colored, besmeared often with a yellow, slimy matter, like bile diffused in mucus, and consists of dryish masses of ill-digested aliment. The urine is a deep-yellow or orange color, and is sparing in quantity. In the human subject, the absorption of bile into the system often generates considerable disorder, operates, in fact, like so much poisonous matter, exciting an itching sensation of the skin, and depressing the strength and spirits of the patient; and the latter of these effects is often

very remarkable in jaundiced horses. The eyelids are drooping or closed ; the head hangs down ; there is evident sinking both of strength and spirits ; and often there is a degree of moping stupor present, which at times, borders on vertigo, so that the animal walks unsteadily, or reels as he moves; his pulse is about 60 or 65 ; his respiration is unaffected, and his flank untucked up.

"In the treatment of jaundice, our sheet anchor is purging. No time should be lost in exhibiting ten or twelve drachms of aloes ; and, if we can insure the administration of it, the decoction is preferable to a bolus. If there was much stupor or vertigo present, I would bleed, but not largely. I would follow up the first dose of aloes with half an ounce in solution every twelve hours until purgation came on ; we need be under no apprehensions of super-purgation in these cases. As soon as the bowels are freely opened, apply a blister to the right side, and repeat it every twelve hours. It may be necessary to recur to the venesection.

"Now and then jaundice terminates fatally, and when it does so, the event is commonly sudden ; probably some time has elapsed before we are called in ; the bowels resist our first dose of medicine ; in the meantime the pulse rises in spite of our recurrence to the use of the lancet; the skin and extreme parts become cold ; the animal grows senseless, and perhaps vertiginous, and in that state suddenly drops and expires. On dissection, the liver is found glutted

with bile. I found the gland so prodigiously distended in one case that the right lobe of it had burst, and displayed a considerable fissure.

Now and then we hear of cases of the rupture of the liver. I have never been present but at the one mentioned above, myself, but I am told that large, heavy, draught horses are more particularly liable to the accident, and that it happens in the violent efforts they are compelled to make in drawing heavy loads."

Should the bowels be freely opened, we think that both *blister* and *venesection* might be dispensed with, for human practitioners have found it advisable, in treating disease of this character, to dispense with both.

MEDICINAL PREPARATIONS USED IN THE VETERINARY PRACTICE.

Compound for Wounds, Saddlegalls, &c.—Pulverized aloes, eight ounces; pulverized myrrh, four ounces; pulverized catechu, four ounces; pulverized benzoin, four ounces; new rum, one gallon. Let the mixture stand for two or three weeks, frequently shaking it, and filter through fine linen.

Styptic.—(To arrest Hemorrhage.)—Powdered gum benzoin, powdered sulphate of potassa, powdered alum, of each one-half pound; water, five pints. Mix, and boil in a glazed vessel, for five hours, stirring constantly, and add fresh quantities

of boiling water to supply the loss which is constantly taking place by evaporation. The mixture possesses the property of coagulating blood.

Another.—Tincture of mastic.

Another.—Tincture of muriate of iron.

Physic Ball.—Powdered aloes, six drachms; powdered gentian, one and a half drachms; oil of peppermint, five drops; soft soap, sufficient to form a bolus. A little honey, or mucilage, will also render the mass tenacious enough to administer.

Physic Drench.—(Cathartic medicine.)—Pulverized aloes, six drachms; syrup of buckthorn one ounce; tincture of ginger one ounce.

Laxative Ball.—Powdered aloes, three drachms; powdered sulphur, one ounce; mandrake, two drachms. To be formed into a bolus, with honey or mucilage.

Another.—Powdered aloes, three drachms; powdered mandrake, two drachms; soap, four drachms.

Croton Purge.—Pulverised croton seed and farina are frequently used as purgatives by the profession; the former in doses varying from fifteen to thirty grains, and the latter from twenty-five to forty-five grains.

Alterative Drench.—(To change morbid action.) Sulphur, one ounce; powdered mandrake, two drachms; thin gruel, one pint.

Antispasmodic Drench.—(For spasmodic action, either nervous or muscular.)—Tincture of asafœtida, one ounce; tincture of valerian, one ounce; syrup of garlic, three ounces; gruel, one pint.

Another.—(For spasmodic cough.)—Balsam copaiba, half ounce; sweet spirits of nitre, three drachms; sulphuric ether, half a drachm; tincture of musk, half ounce. Half the above quantity to be given, night and morning, in gruel.

Tonic Drench.—(For weakness and debility.)—Port wine, three ounces; Tincture of cinnamon, half ounce; powdered goldenseal, four drachms. To be given in thin gruel. Should the bowels be torpid, omit the *port wine*, and substitute one and a half ounce of pale brandy.

Diuretic Drench.—Fir balsam, half ounce; sweet spirits of nitre, two drachms; tincture of asafœtida, one ounce. To be given in a thin mucilage of slippery elm.

Nauseant and Diaphoretic Drench.—(To increase the function of cutaneous exhalants in febrile diseases.)—Powdered lobelia, two drachms;

powdered bloodroot, one drachm. To be given in warm water, and repeated at given intervals.

Stimulating Drench.—Tincture of capsicum, half ounce; tincture of ginger, half ounce; tincture of cinnamon, half ounce. To be given in gruel.

Narcotic Drench.—(To relieve pain and induce sleep.)—Tincture of Indian hemp, three drachms; chloroform, half a drachm. To be given in warm water. An infusion of poppies, or hops, is a good anodyne.

Sedative Drench.—(To lessen arterial action.)—Tincture of arnica, four drachms; water, one pint; To be repeated, gradually lessening the dose.

Cooling and Refrigerating Drench.—(For fevers or thirst.)—Cream of tartar, half ounce. To be given in an infusion of lemon balm.

Phthisical Drench.—(For Phthisis Pulmonalis.) Powdered iodine, ten grains; powdered hydriodate of potassa, twenty grains. To be given daily, in a decoction of comfrey, (*symphitium officianalis.*)

Vermifuge Drench.—Aloes, four drachms; oil of wormseed, twenty drops; powdered male fern, (*aspidium felix mas,*) one ounce. To be given in one pint of weak soap suds an hour before feeding.

Parturient Drench.—(Given to arouse the uteras in protracted labor.)—Spurred rye, *(secale cornutum,)* three and a half drachms. To be given in a decoction of bethroot, *(trillium purpureum.)*

Antacide Drench.—(To correct flatulency.)—Lime water, two ounces; tincture of gentian, half ounce; tincture of ginger, half ounce. To be given in an infusion of horsemint, *(monarda punctata.)*

Lithontriptic Drench.—(For urinary calculi.) Lime water, two ounces; honey, four ounces; infusion of sassafras, one pint. To be given daily for a fortnight or more.

Saline Aperients.—(*Either* of the following is a dose.)—Epsom salts, twelve ounces; glauber salts, twelve ounces; Rochelle salts, eight ounces; sulphur, from one to two ounces.

Demulcents.—(Intended to lubricate and sheathe mucous surfaces.)—Mucilage of slippery elm, mucilage of gum *acacia, (Arabic,)* mucilage of gum tragacanth, mucilage of Iceland moss, mucilage of benne leaves, *(sesamum indicum,)* liquorice root. The mucilage is made by pouring boiling water on a certain quantity of either of the above articles, and stirring until the required consistence is obtained. This dose is *ad libitum.*

Discutients.—*(Medicines that are supposed to possess the power of repelling or resolving tumors.)* —Ointment of iodine and hydriodate of potassa, made thus:—Bayberry wax, six ounces, mutton tallow, six ounces; iodine, one ounce; hydriodate of potassa, one ounce. Melt the wax and tallow; and when partly cool, rub the whole together in a mortar. This is an excellent preparation for enlarged glands, before they suppurate. The next best discutents are, cold water, diluted acetic acid, soft soap, brine, and new rum. In fact, all refrigerants act as discutients.

Rubefacients.—Rubefacients are substances which, when applied to the skin of a horse, produce increased action in the part without blistering: such are alcohol, tincture of capsicum, stimulating liniments of various kinds, strong vinegar, and turpentine, mixed with linseed oil. They are indicated in all cases of internal congestion in view of counter irritation: for chronic lameness, and to soften indurated and indolent tumors.

Vesicants, or Blisters.—The principal one used is *acetate of cantharides*, made as follows:—Strong acetic acid, eight ounces; water, one quart; powdered Spanish flies, three ounces. Mix; let it stand for fourteen or more days, and then filter through blotting paper. Used in cases of spavin, splent,

ringbone, and callous swellings. The usual vesicant is common horse blister, thus prepared :—

Take lard, free from salt, twelve ounces; melt it in an earthen vessel with two ounces of rosin,—taking care not to raise the temperature above that of a man's blood,—then add powdered Spanish flies, two ounces; oil of origanum, one ounce: stir until cool.

The part to be blistered should be shaved, and then rubbed for a few minutes with strong vinegar; after wiping the part dry, spread on the blister to about the thickness of a dollar. If it be necessary to keep up the vesicatory action, let it be dressed daily with savin ointment.

Antiseptics.—Antiseptics are remedies which arrest decomposition and excite the healing process in wounds; among them we name pyroligneous acid, salt, charcoal, chloride of lime and of soda.

Emollients.—The best emollient for softening and lubricating a part is poultice of slippery elm; the next best is tepid water.

Digestives.—Digestives are used for the purpose of hastening suppuration; we have used a great many, but find nothing equal to the following :

Bar soap, two ounces; brown sugar, two ounces; powdered bloodroot, half ounce. Mix and apply by means of a bandage.

Fomentations.—Fomentations are indicated in all inflammatory swellings, strains, and bruises, and are occasionally applied over the region of deep-seated inflammatory disease—located in the intestines, kidneys, throat, &c. The usual fomentations are composed of warm water, infusion of poppies, hops, and lobelia. They must be perseveringly applied, or they are of little use.

Common Horse Liniment.—Olive oil, twelve ounces; aqua ammonia, two ounces; oil of cedar, one ounce. Mix.

Syrup of Garlic.—Take of bruised garlic, four ounces; acetic acid and water, of each six ounces. Let the garlic macerate for five days; express the liquor and strain it; then add two pounds of white Havana sugar; boil over a slow fire until it is of the consistency of syrup. Dose, two to four ounces. It is an excellent antispasmodic.

Tincture of Asafœtida.—Take gum asafœtida, six ounces; pale brandy, one quart. Macerate for two weeks, and filter through fine linen. This is also an efficient antispasmodic. Dose, three to eight drachms, to be given in thin mucilage or gruel.

Tincture of Capsicum.—Take of powdered red peppers, two ounces; new rum, one quart. Mace-

rate for fourteen days, and filter through blotting paper.

Tincture of Arnica.—Take of arnica flowers, (imported from Germany,) four ounces; new rum, one pint. Macerate for fourteen days; express the liquor, and filter through blotting paper. This remedy, in the proportion of one ounce to a pint of water, forms a good application for wounds, bruises, saddle galls, &c. The author has used it with great success in *amaurosis* and other diseases of the eye of a paralytic character. Given to a horse laboring under inflammatory affections, in the proportion of twenty drops, diluted with water, it acts a sedative, and lessens the heart's action; in view of producing effect, however, the dose must be repeated at intervals of four hours. It is useful also in ophthalmia.

Tincture of Ginger.—Take powdered Jamaica ginger, five ounces; pale brandy, one quart. Macerate for fourteen days, and filter. Properties, stimulant and carminative. Dose, one to two ounces in gruel.

Composition for Colic.—Powdered cinnamon, powdered ginger, powdered cloves, powdered charcoal, powdered slippery elm; equal parts. Dose, a table-spoonful, to which add one quart of boiling water. Let it stand for a short time, then pour of the clear liquor; sweeten with honey, and drench the subject.

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