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A BOOK FOR EVERY FARMER

THE FARMER'S PRACTICAL HORSE FARRIERY.

CONTAINING

RAREY'S ART OF TAIMING VICIOUS HORSES, WITH ILLUSTRATED INSTRUCTIONS, PRACTICAL RULES ON BUYING, BREEDING, BREAKING, LAMENESS, VICIOUS HABITS, MANAGEMENT, PREVENTION, SYMPTOMS, TREATMENT AND CURE OF DISEASES. AND THE LARGEST COLLECTION OF VALUABLE RECEIPS, EVER PUBLISHED, &c, &c, &c.

TO WHICH IS PREFIXED

AN ACCOUNT OF THE BREEDS IN THE UNITED STATES

WITH NUMEROUS ILLUSTRATIONS.

COMPILED BY E. NASH.

10th Thousand Revised.

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PREFACE.

The title of this work will in some degree indicate our purpose in presenting it to the public; a few remarks, however, may be appropriate.

The conviction that the works on Horse Farriery, at the present day, as a general thing, are not written so much to instruct and benefit the horse owner and breeder, as the veterinary surgeon, that they confuse rather than instruct the common reader, that they are too scientific, technical, minute and elaborate, to meet the wants and demands of our agriculturists, who, from the scarcity of competent veterinary surgeons and frequent impositions, are compelled to treat their own horses, are among the prominent reasons that have induced us to present these pages to the farming community. We do not claim to have presented much that is new, but as usefulness rather than originality was the object kept constantly in view, we feel but little regret on this point.

We have consulted the best American and English authorities on the veterinary art, and skillful practitioners, the experience of many intelligent and practical farmers who have communicated their views and experience in such papers as the Veterinary Journal, Cultivator, Agriculturist, Rural New Yorker, Boston Cultivator, Vermont Stock Grower, N. Y. Tribune, &c., for years past, and have obtained from these many valuable prescriptions and suggestions. Availing ourselves of these sources, we have collected a vast amount of valuable material on the subject of the work. This we have examined, sifted, arranged, digested, and reduced, by excluding words, retaining ideas, facts and opinions, so as to present the substance and cream of the whole in a clear, simple style, within the comprehension of every one of common capacity. We have submitted the matter, previous to publishing, to one of the most noted stock breeders in the U. S.; and the symptoms and treatments

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of diseases, to one whose experience and ability has eminently qualified him. To these gentlemen we are under special obligations.

This work is not only adapted to the wants of the farmer, but it should be in the hands of every person who owns a horse, for every one who keeps a horse should not only learn to keep him in health, for pecuniary gain, but as a matter of humanity and benevolence.

We have aimed to be practical and definite on all points. We regret that we have felt compelled to be so brief on many important matters, and indeed several articles have been thrown out entirely, for the want of room. If the reader will reflect that a large volume has been written on the horse foot alone, he will easily conceive our confined, embarrassed, and cramped situation; having to treat on so many different points and subjects within the scope of 200 pages, we have omitted illustrations, reasons, arguments, &c., and presented the naked facts. To those who may wish for a more extended description and treatment of diseases, we most cheerfully commend Dr. Dadd's Modern Horse Doctor, or Youatt on the Horse.

More space is given to the method of training and breaking horses, in view of the interest that has been elicited on the subject, than would have been, under other circumstances.

The method of treatment of Mr. Rarey, found in this book, we will guarantee is fully equal if not superior to any of the so called Patent Rights, and we have our serious doubts, from all the evidence we have been able to gather, that there is any Patent Right, Copy Right, or any other right about them, but what the public have just as good a right to as they have to the President's Message. The use that has been made of this so called Right, and the manner in which it has been conducted of selling it as a Patent Right, and a little 6 cent pamphlet for $10, binding the purchaser under $300 bonds never to disclose it, and selling County rights for $1000, and the like, we think is one of the greatest impositions that has ever been passed upon the American People.

Conscious of its imperfection, but trusting that it will in some degree meet the wants of the farmers, in adding to the comforts, improving the condition, relieving pain, removing disease, and sometimes saving the life of the noble and most useful animal, the horse, the author now lays it hopefully before the public.

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CHAPTER I.

HISTORY, BREEDS AND VARIETIES OF HORSES IN THE UNITED STATES.

ORIGIN AND VALUE OF THE HORSE.

The history of the Horse, intimately interwoven as it is with man, can hardly fail to interest the most careless student. From the earliest ages, he has been man's faithful ally and willing slave. In war, he not only moves all the machinery of the field and camp, but shares with his rider, all the fatigue and danger of the battle. In peace, how various and invaluable are his services. Every branch of industry owes much to his patient toil. He plows the soil, sows the seed, reaps the harvest, and transports it to market. He has been admired, cherished and loved equally by the most enlightened and most barbarous races of man, and is almost invariably considered the most useful and manageable of all our domestic animals. He was domesticated in the days of Mores, and the earliest record traces him to Egypt, whence he gradually found his way to the various Egyptian Provinces.

The wild horses of South America, are supposed to have been descended from animals left in the country by early Spanish adventurers. Fossils have lately been discovered in the south which

seem to show that the horse was an inhabitant of the western hemisphere, long before his discovery by the Egyptian.

The principal varieties of horses which are found in the United States, are the Arabian; the Morgan; the Race-Horse; the Canadian; the Norman; the Draft Horse; and the American Trotting-Horse. The mongrel known as the "common horse," is descended from the many different varieties and exhibit too many different charactestics to admit of any particular description.

THE ARABIAN HORSE.

This Horse deservedly occupies the very highest rank. As late as the eleventh century, the Arabs possessed but few horses, and these were of inferior quality. The horses they obtained from Capadocia, and neighboring provinces, were preserved with so much care, and so uniformly propagated from the best animals, that in the thirteenth century they had obtained a just and unrivalled celebrity.

The Arabs divide their horses into three classes, the *Attechi*, or inferior breed, which are of little value; the *Kadischi*, or mixed breed; and the *Kochlani*, or thorough-bred, whose pedigree, if we credit the Arabian account, can be in some instances traced for two thousand years.

The Arabian Horse would not be acknowledged by every horseman to possess a perfect form. His head, however, is inimitable, and is universally acknowledged to be unsurpassed in any other breed. The shoulders, withers, loins and hips are excellent. The feet are good, the pasterns long and oblique, and the limbs light, but well shaped and muscular. They are not adapted to carrying heavy weights or drafts, and they are never put to such service.

The muscles of the thigh and fore-arm are strikingly developed, and assure us of his ability to perform many of the feats of strength and endurance related of him. But in reading of his really marvelous marches, we must remember that there are no watches to note accurately the time, no mile stones to mark correctly the distance on the paths of the desert, and much allowance must be made for the proneness of the Bedouin to exaggeration. The Arabian is as celebrated for his docility and good temper as for his speed and courage. It is to the Arabians that the English are chiefly indebted for their unrivalled breed of horses for the turf and chase.

LAYARD, the explorer of Nineveh, who is as familiar with Arabs as he is with antiquities, gives some curious details respecting the true horse of the desert. Contrary to the popular notion, the Arabian is celebrated less for swiftness than for courage and endurance. Only when pursued, does a Bedouin put his mare to full speed. It is the long distance they will travel, in emergency, without rest, and the comparatively small amount of food they require, which render the Arabian horses so valuable. Layard says that he knew of a celebrated mare, which carried two men in chain armor beyond the reach of some Aneyza pursuers. This mare rarely had more feed than twelve handsful of barley in twenty-four hours, except during the spring, when the pastures were green, and it is only the mares of the wealthy Bedouins that can get even this allowance. They are never placed under shelter during the summer, nor protected from the biting winds of the desert in winter. The saddle is rarely taken from their backs. Cleaning and grooming are strangers to them. They sometimes reach fifteen hands in height, and never fall below fourteen. In disposition they are as docile as lambs, requiring no guide but a halter; yet in the flight and pursuit their nostrils become blood red, their eyes glitter with fire, the neck is arched, and the main and tail are raised and spread to the wind, and the animal seems wild and unmanageable, when in fact it is guided by the slightest touch or word, while its fleet and tireless step "leaves clamor and pursuit behind." Their value is so great, that a thoroughbred mare is generally owned by ten, or even more persons, and one can rarely be obtained, except by fraud and excessive bribery. The reason is this. The Bedouins are almost constantly engaged in quarrels with their neighbors, or among themselves, and are often exposed to dangers from which they can escape only by the superior speed and endurance of their horses. It is not surprising

that the Bedouins, whose entire possession consists of a few household utensils, his tent and his mare, should set such enormous value upon the latter, provided she be more fleet and enduring than the majority of her kind. It will be a subject of regret, to those who admire fine horses, to learn that the Arabian is thought to be degenerating, owing to the decline of the Bedouin tribes.

The amount of Arabian blood which mingles in the veins of the common horses of the U. S. is probably greater than is usually supposed. The first importation of these horses was the Lindsay Arabian. He was folded in 1762 and landed in 1766, His stock proved very valuable, and he left a numerous progeny. Numerous importations have since been made at various times, of Arabian horses, and there are several imported animals of this stock, owned in different parts of the country.

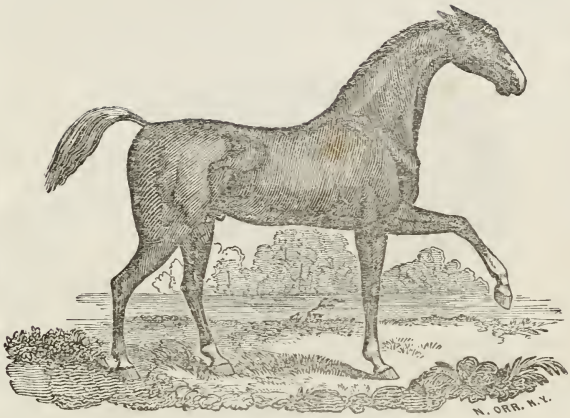
In addition to the Arabian blood, imported directly from the east, much has been borrowed through horses imported from England, which were nearly related to Arabians.

THE THOROUGH-BRED HORSE.

Mr. Youatt says: "There is much dispute with regard to the origin of the *thorough-bred horse*. By some he is traced through both sire and dam to Eastern parentage; others belive him to be the native horse, improved and perfected by judicious crossing with the Barb, the Turk, or the Arabian."

In England a horse is held to be not strictly thorough-bred unless his pedigree be directly traceable on both his sire and dam side to an imported Barb and Arabian. The English racer is generally distinguished by his beautiful Arabian head; his fine and finely-set-on-neck; his oblique, lengthened shoulders; well-bent hinder legs; his ample, muscular quarters, his flat bony legs, rather short from the knee to the fetlock, but apt to be a little narrow below the knee, long and elastic pastern, sound good feet, and a beautiful short and glossy coat. He has been bred for many generations solely for the race course, and in his speed combined with ability to carry a heavy weight through a four mile race he has no rival, and has beaten every competitor on his native soil

A large majority of the best thorough-bred horses are descendants from the Darly, or Gudolphin Arabian, the former was imported in England by Mr. Darly, in 1703, and the latter was brought into England about 1730. The most distinguished sons of the Darly Arabian, were Flying Childers, and the Bleeding or Bartlett Childers, and through Childers, and Blaze descended. Sampson is said to have been the strongest horse that has ever appeared on the turf.

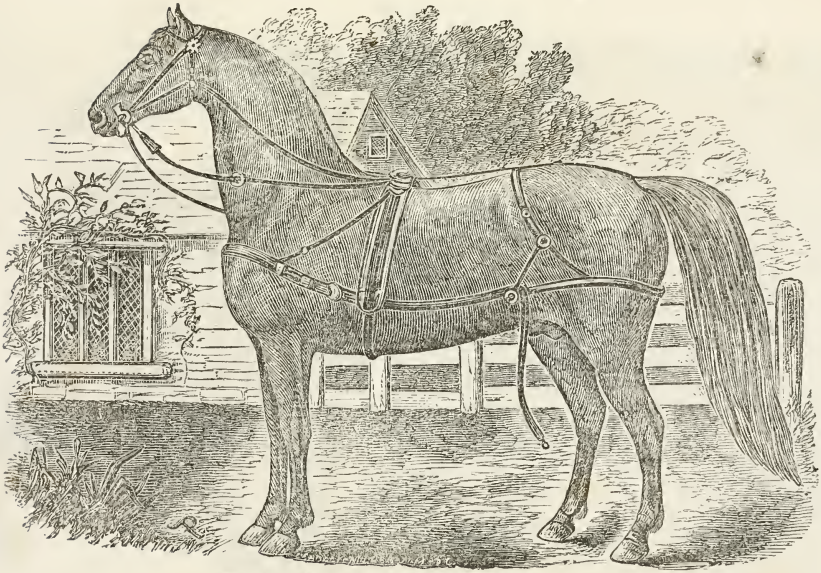


FLYING CHILDERS.

It is now a little more than one hundred years since the first importation of noted thorough-bred horses were made to this country. Of the importation prior to 1800, the most celebrated horses were Fearnaught, James Morton, Traveler, Wildair, Dionell, Medley, Shark, and Messenger. Many of the best horses of England have been at different times imported, and their blood mingled largely with that of the common stock of the country. Race horses are most common in the Southern States, and much attention is there paid to breeding and training them, In that section of the country light single carriages are but little used in ordinary business traveling, unless in public conveyance, being usually performed on horseback. For use under the saddle the thorough bred horse is eminently well suited.

In the Northern States a person is seldom seen on horseback. Light carriages or open buggies have come into universal use, and the trotting has taken the place of the saddle horse. For several years past comparatively little attention has been paid in breeding the thorough bred in the New England, and the Northern and Western States. In Virginia and Kentucky, a great deal of attention is paid to the breeding and training of the race horse, and it is claimed that the best specimens of the breed in this country are to be found in these States.

It has been asserted by some writers that the race horse deteriorates upon being transported to this country, and that our soil and climate are not well suited to best developement of his powers,



ALEXANDER,

Property of Geo. W. Miller, Conquest, Cayuga Co., N Y.

The best authorities in the country are of the contrary opinion, and hold that the soil and climate of the U. S. is in respect inferior to that of Great Britain, for the fullest development of the power and qualities of the horse There can be but little doubt that this opinion is well founded.

The soil and climate of the central and southern portion of this country, certainly more nearly resemble that of Arabia than does the soil and climate of the British Islands; and the fame of the horses of Arabia, which for four centuries has been universal, seems abundant evidence that the soil and climate of that country are eminently well fitted for his most perfect development.

We introduce an engraving of Alexander, one of this breed, which is one of the finest horses in Western New York, he has a high carriage, a proud and fearless style of movement, a lively and intelligent expression, perfectly gentle and docile, is safe for a women to drive at any time, has a strong, compact, and vigorous constitution, is easily kept, and is all that could be desired for a carriage horse. He has never been trained for the course, but has gone with ease a mile inside of three minutes, several of his colts have been sold on account of thier speed at high figures. His stock generaly are remarkabl fine animals, and we believe will compare favorabely with any in the country.

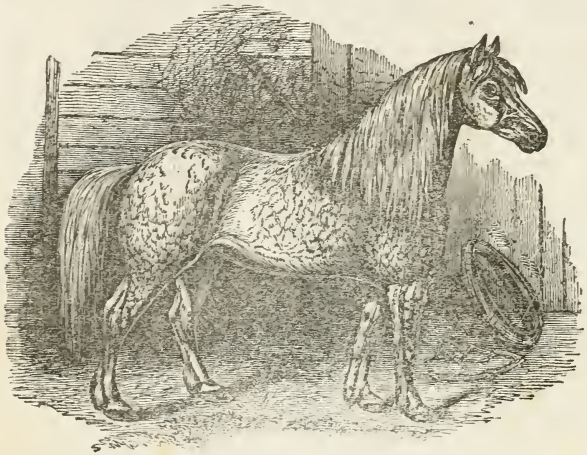
THE NORMAN HORSE.

The Norman Horse derives his name from the provinces of Normandy, in France, where he is bred. The origin of the most esteemed variety is said to have been a cross between the Andalusian horse of Spain (which is descended from the Arabian and Barb, brought into Spain by the Moors,) and the old Norman draft horse, it partook very much of the general character of all the heavy horses of the "low countries" which have been for several centuries celebrated for their size and strength, their docile and teachable temper, and their admirable adaptation to porposes of heavy draft.

The Norman horse is remarkable for strength, good wind, and great power of endurance. It is said, "with their necks cut to the bone, they flinch not; they put forth all their efforts at the voice of the driver; *they keep their position when other horses would die of neglect and hard treatment*". They are so hardy that there is but little risk in raising them, and they are so exceedingly docile and free from vicious habits, that little trouble is experienced in breaking them to the harness. They possess a tolerably lively temperament, but are not fast They seem particularly adapted to carrying heavy weights at a medium rate, being much better travelers than the English draft hor[illegible],

and not so good as the Hackney. They are much liked by the stage proprietors of France, and they are very generally employed by them in hauling coaches used in that country for the transportation of the mails and passengers. The rate of travel is from 7 to 9 miles the hour, they are nearly 16 hands high, and weigh, from 1000 to 1200 lbs.

The largest specimens of the breed make excellent animals for quick and heavy draft. The Normandy carriers travel with a team of four horses, and from fourteen to twenty two miles per day, with a load of 90,000 weight. But few of these horses have as yet been imported to the United States,



A CANADIAN HORSE.

THE CANADIAN HORSE.

There can be little doubt that the Canadian Horse is of Norman French descent, as in very many of his characteristics he displays a striking resemblance to those horses. Indeed, the principal diference between them consists in the inferior size of the Canadian, which may be accounted for by the little attention that has been paid to breeding them the region of climate, and the scanty fare upon which they live. They are found chiefly in the province of Canada, though met with in considerable numbers through the Northern States. In some parts of Canada

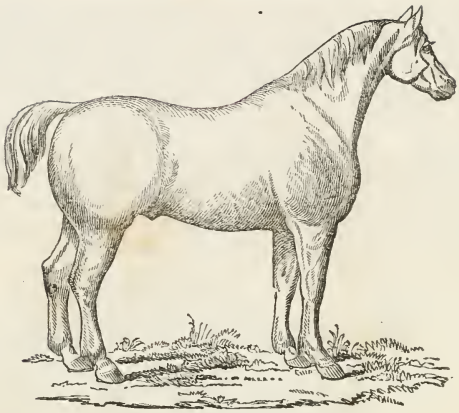
they have been crossed with the English race horse, with very decided benefit. Many pacers are found among them, and these make excellent saddle horses for short journeys, and are sometimes very fast, for a short distance. No pacing horse can maintain a high rate of speed for a long time. Some of them have proved fast trotters, but have generally shown some traces of racing blood. Moscow, formerly owned by Gen. Dunham, was a Canadian horse, bred near the head of Lake Champlain. He was one of the fastest horses in the country at that time. It is said that his dam was by Sir Walter, a thorough bred horse.

Canadian horses are long lived, easily kept, and exceedingly hardy and good tempered. They make excellent horses for work on the farm, and when large enough, are good for heavy draft. They are usually from 13 1-2 to14 1-2 hands high, and weigh from 800 to 1000 lbs. Considerable numbers of these horses are shipped every year to the Southern States, and to the West Indies where they are used to cultivate cotton and sugar.

DRAFT HORSES.

We have in the United States no distinct breeds of draft horses, and very little attention is now paid to breeding horses that are adapted solely to purposes of draft The Canestago horses, bred chiefly in Pennsylvania, are the nearest approach to this, and prior to the construction of railroads they were in much demand. Like the English draft horses, they are descended principally from the Flemish horses, crossed with varieties of the English, which have at various times been imported. The demand for these horses has of late years almost entirely ceased, and the breed are rapidly disappearing They are generally bay, and sometimes brown or black, but rarely any brighter color. They are often over seventeen hands high. The quarters are generally good, the shoulders ample and well placed, the neck rather long and the head good. The limbs are usually well shaped, but are often too long, and they are inclined to be too light in the bressel. They are dull travelers. Few horses exhibit greater docility and tractability, and their patience in bad spots, and unwavering willingness to exert themselves, render them very valuable for purposes of slow draft. In some parts of the country draft horses are bred by crossing mares of the common stock with stallions imported from Europe.

THE CLEVELAND BAY HORSE is now nearly extinct. They are distinguished by their good figure activity and great strength. They have been known to carry more than 700 lbs. 60 miles in 24 hours, and to perform this journey four times in a week, and mill horses have carried 900 lbs. for 3 miles.



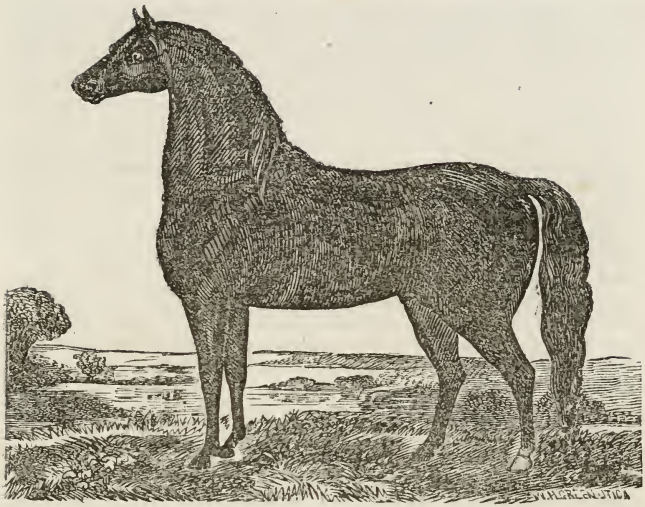
A CLYDESDALE HORSE.

Fifty years since, the coach horse most in repute in England was obtained by crossing the Cleveland mare with a three-fourth or a thorough bred stallion. They are much used on the coaches in England, and their average speed is about ten miles per hour. Some of these horses have been imported into the State of New York, and within the past ten years into Maryland. They have not been bred from sufficiently as yet, to warrant a confident opinion as to the character of the animals produced by the cross with our native stock. It seems, however, fair to presume that they will prove valuable horses for heavy farm work, and for all purposes of quick but heavy draft.

THE CLYDESDALE HORSES are deservedly esteemed for the cart and for the plow on heavy soil. They are strong, hardy, steady, true pullers, of sound constitution, and from fourteen to sixteen hands high. They are broad, thick, heavy, compact, well made for durability, health, and power. They have sturdy legs, strong shoulders, back, and hips, and a light face and head.

THE MORGAN HORSE.

This American variety of horse is, perhaps, held in higher estimation, and has obtained a greater celebrity than that of any other in the United States, particularly in the Northern and Eastern States; and, we think, the fact would sustain the assertion,



BLACK HAWK HERO.

no horse has been so generally admired, and taken the number of first class prizes at our State and other Fairs as the Morgan.

Their high carriage, light and rapid step, lively and intelligent expression, and perfect docility, combined with courage and hardy constitution, have made them generally favorites wherever they have been well known.

A horse called Justin Morgan, is universally admitted to have been the founder of this famous breed. He was folded near Springfield, Mass., in 1793, and was got by a horse called True Britton, or Beautiful Bay. His dam was of a stock of horses much esteemed in Massachusetts and Connecticut, called wild in breed. The Justin Morgan was about fourteen hands high, weighed about 950 lbs. His color was a dark bay, with black legs, mane and tail. Head good, not extremely small, but lean and bony; forehead broad; ears, small and rather wide apart; eyes, medium size, dark and prominent, with a spirited and pleasant expression; nostrils, very large; muzzle, small; lips, close and firm; back, short; shoulder blades and hip bones, very long and obliqued; loins, exceedingly broad and muscular. His body is rather long, round and deep, close ribbed up; chest, deep and

wide; breast, broad, projecting in front; legs, short, close-jointed thin, but very wide, hard, and free from meat; muscles remarkably large for a horse of his size. His hair was short, soft and glossy; a little long hair about the fetlocks; feet small, but well shaped. He was a very fast walker; in trotting, his gait is low and smooth, his step short and nervous. He was not what is called, in these days, a fast horse, though it is claimed by some that he could trot a mile in three minutes. His proud, bold and fearless style of movement, his vigorous, untiring action have, perhaps, never been surpassed.

He was thoroughly trained to the saddle, and was a great favorite with military men, as a parade horse, and scarcely a military review took place in that section of the country where he was owned, of which he was not a prominent attractive feature. He was perfectly gentle, docile, loved to be groomed and caressed, but disliked children about him; had an inveterate hatred for dogs; if loose, always chased them the instant he saw them; and was an eager and nimble traveler, patient in bad spots, and celebrated for his willingness to do his best, and for his great power at what is called a "dead lift." He died in Chelsea, Vt., in 1821, at the age of 29 years, from the effects of a kick received from a horse which was running loose with him in the yard. Previous to this, he was perfectly sound, and free from blemish. His appearance was remarkably fresh and youthful, a life of hardship and severest toil had not broken his constitution or impaired his courage. Age had not quenched his spirit, nor dampened the ardor of his temper. His eye was still bright, his step firm and elastic.

All the immediate descendants of this remarkable horse have a striking resemblance in all his leading characteristics. Each exhibits in a high degree those qualities that have given such celebrity to their sire; all had the compact form, wide bony legs, great energy, vigorous health and iron constitution. This compactness of form, nervous energy, strength of constitution, docility, and power of endurance, is exhibited in a high degree by the Morgan of the present day. There has been, and are now, doubtless, more "fast horses" of the Morgan breed than of any other one variety in the United States. Among them may be named "Fanny Jenks," (who trotted 100 miles in 9 hours 25 minutes;) "Black Hawk," (who trotted 5 miles in 16 minutes;) the celebrated "Lady Sutton," (who trotted 2 miles in 5 minutes 17 seconds;) "Blue Morgan," "Flying Morgan," and the matchless Lansett, the fastest trotting gelding that has ever appeared on the turf.

These horses are particularly well adapted to pleasure driving in light carriages. They are not large enough for purposes of heavy draft, and rarely move in any other pace than a walk or a trot They do not make good saddle horses.

THE TROTTING HORSE

The trotting horse is bred and trained successfully only in the United States. The English, with all their taste for the sports of the turf, and their skill in breeding the race horse, have failed to produce any trotters which in this country would rank higher than second or third class animals. The best trotting ever done in England or on the continent, has been performed by American horses, and these were not considered with us first class animals. The French Emperor, who formally spent some time in this country, seems well aware of their superiority, and keeps in his stables some fifteen or twenty American horses.

Strictly speaking, we have no distinct breed of trotting horses in this country. In examining the best trotters in the country, we are struck with the great dissimilarity of form, temperament, and general characteristics, and the little evidence of any relationship in blood. If, for example, we compare Lady Suffolk and Lady Sutton, for the first class trotters ten years since, the difference in their form, temperament and style of movement and general appearance will be very apparent; indeed, they exhibit scarcely any characteristics except speed, which were common to both. So with the two animals confessedly at the head of the list of trotters in the country at the present time, Flora Temple and Lancet. Scarcely any resemblance can be traced between them except in their speed, and yet in this latter respect there is little to choose between them. This dissimilarity in the form, temperament, style of movement and general appearance of our trotting horses would lead us to infer that they are descended from breeds or families of horses of widely different characters. Such is the fact, and there is scarcely a family or strain of horses in the country which has not a trotting representative. But although every family or strain of horses may have its trotters, comparativly few are noted for producing what sporting men call "flying." The trot is an unnatural pace to the horse, and in his wild state he moves only in a walk or gallop. Had it been impossible for man to teach him this pace, he would have proved a far less useful servant than he is, and we should be compelled to use him chiefly under the saddle.

Careful training and constant use in harness for many generations so developes and improves and fixes this pace that the off-

LADY SUFFOLK.

spring at an early age manifest their precocity in this respect. Hence the breeder who wishes to obtain rapid and graceful trotting horses, will select both the sire and the dame from those families or breeds of horses which have exhibited superior excellence in this particular, and he should also be sure that the animals selected exhibit peculiar excellence in this respect. Not that they must be what is called "fast," but they should be nimble, lively steppers, should move easily and gracefully, and exhibit that oneness and quickness of temper which renders them at all times perfectly manageable. Pursuing such a course, the breeder may reasonably expect to produce animals the average of trotting horses, but if he expects every colt will prove a "flyer" he will be pretty sure to be disappointed, for by the utmost care and skill a few only will prove fast.

The training of the trotting horse requires much time and skill, and differs very materially from the race horse. In training the race horse, the principal object sought is to put the animal in such condition as will most fully develope his muscular powers. The pace is a natural one, and comparatively little can be done to improve it.

In training the trotter, not only must he be put in the same phenial condition, but in addition to this, he must be taught to exert his powers in a pace altogether unnatural to him, and one which, when pushed, it is difficult for him to keep.

WILD OR PRAIRIE HORSE.

The wild Horse of South America descended from two stallions and four mares, which the early Spanish adventurers left there. The wild horses, which abound in the Southwestern States are doubtless sprung from the same stock, which were of the celebrated Andalusian breed, derived from the Moorish Barb. The prairie horses are often captured, and when domesticated are found to be capable of great endurance. They are not however, recommended by the symmetry or elegance of apperance for which their type is so greatly distinguished, being generally rather small and scrubby.

SHETLAND, MUSTANG, AND INDIAN PONIES.

The Shetland are the most remarkable of all the pony races, and the best adapted for the principal purpose to which they are used, for learning little boys and girls to ride. They are natives of all the Scottish isles, and rarely exceed three feet four inches in heighth, and none are considered truly bred which exceed three feet eight inches. Many are found which do not exceed thirty two inches; their color is usually black, are exceedingly tough, strong, hardy, spirited, docile, intelligent, affectionate, and free of disease; they bear a strong resemblance to the Norman and Canadian horse, literally made of iron, will subsist on almost nothing; in their native country, wild meadow hay or barley straw is a dainty for them. Their speed is not great but will go along at a sort of a waddling run, their fifty miles a day for weeks under a weight that would bother some horses, that is 150 to 200 lb. or 300 lb, in a wagon. They are not often of the pure breed imported into this country.

The Mexican Mustang ponies are of Spanish origin, are found chiefly west of the Mississippi. They possess considerable spirit, and vigor, their height is usually about four feet six inches, may be found of all colors, but lack in symmetry, hardihood, and endurance.

The Northern Indian pony prevails from Canada downward west of the lakes—never exceed four feet six inches in height, they are short barreled, round ribbed, strong-limbed short and thick necked, with legs, fetlocks and feet literally of iron, his mane, tail, and forelocks, very heavy. In a word, he is the pure Norman war-horse, of the largest and oldest type *razeed* into a pony. They are in every respect, but size and speed, all that could be desired. They are sure footed and as easily fed as a mule, and fifty to one more enduring of cold. At their own pace, from five to seven miles an hour, they will jog along, perfectly unwearied, for fifty miles a day, week after week, with a load of 160 lb on the saddle, or 300 in a wagon. They are very docile, intelligent as dogs, good-tempered when not stallions, and extraordinarily high-couraged.

CHAPTER II.

BREEDING AND MANAGEMENT OF COLTS.

BREEDING.

That a proper knowledge of the laws of breeding, is a matter of primary and vast importance, is a generally admitted fact, and requires no argument to prove, as it is only by this means we can maintain the present qualities of our improved breeds, and prevent the race from degenerating, and correct and improve their imperfections. And it is equally true that there are many erroneous views entertained and practiced by many of our Farmers. No person should attempt breeding, particularly the horse, without first making it a matter of investigation, patient study, and inquiry. The first axiom we would lay down, says Youatt, is, that like will produce like, that the progeny will inherit the general or mingled qualities of the parents. There are but few diseases by which either of the parents are affected that the foal does not inherit or show a predisposition to. Broken wind, spavins, ring-bones, founders, blindness, roaring and the like, are transmissible, there can be no question not excepting ill-usage and hard work.

These blemishes may not appear in the immediate progeny, but will in the next or more distant generation. From this arises the necessity of some knowledge of both the sire and the dam. The most careless breeders have observed qualities appearing in their stock that belonged to neither sire nor dam, but which belonged to their ancestry further back; such as a vicious temper, some peculiar mark, white face or feet. Not only are diseases inherited by the offspring, but the form, spirit, constitution and temper. *This maxim, however, that "like begets like," is only true in part, as there is a constant tendency to change, arising from difference in food. Change of climate, or other physical conditions to which they might be exposed, might naturally be expected to produce considerable corresponding modifications in the form, size, color, and coating of animals; as it is well known that cattle generally become very large and fat when reared for many generations on moist rich soils, where good pasturage abounds, but are distinguished by the shortness of their legs; while on drier situations, where the herbage is sparse, their whole bulk is less, and their limbs more muscular and strong. A country of heaths, or of other innutritious plants, will not produce a horse so large nor so strong as one of plentiful herbage, as is manifested between those reared on bleak mountains and fertile plains, high latitudes and more temperate climes, sandy deserts and watered vales. A change of situation in the one case, after a succession of gen-

*D. J. Bowne, in Patent Office Official Report, 1854.

erations, not only diminishes the size of the animal, but affects the character and form of his body, head, and limbs. Thus, if a London dray horse be conveyed to Arabia, and subjected to the same influences to which the native breed of that country is exposed, in the course of some generations he will present the leading characters of the Arabian horse. On the contrary, if the race thus changed be conveyed again to England, in the course of several generations, it will gradually acquire the properties it formerly possessed. This fact would seem to prove that the Arabian horse cannot exist in perfection in any of the northern or western countries of Europe, and that the humidity of the climate and the influence indirectly arising from that cause, are the principal reasons of this change. Similar instances might be given in reference to the changes which have been observed in the sheep, the goat, and the hog. The former, when subjected to the climate of the West Indies, from Thibet, Spain, or Vermont, where their fleeces are fine, delicate, and soft, after a few years are entirely covered with rough, coarse hair, resembling that of the goat.

Breeding should be conducted with some definite object in view. There is no greater error than the common remark of some farmers, of some wretched under-sized, ewe-necked, cat-hammer wreck of a mare, broken-winded, ring-boned, and spavined, "Oh, she will do to raise a colt out of!" She will do! but what will the colt be? It will not be worth the mare's grass, let alone the price of the stallion's service. But it is a good feature that there is a growing anxiety among farmers to raise valuable stock. This is attributable to

the fact, that it is not only as cheap to keep a good horse as a bad one, but in reality it is much cheaper. The prime cost is the only difference to be considered; the cost of stable room, keep and care is identical, while the wear and tear is infinitely less, in the sound, able, useful animal, than in the broken jade. The work which can be done, and the value earned by the one, is in no possible relation to that of the other. The horse bought at the age of four years at $300, when he has attained the age of eight is worth twice the money, either for work or for sale, to the horse that was bought for a third of that price, when he has attained the same age.

What is called *breed* in horses, consists in the superior organization of the nervous and thoracic organs, as compared with the abdominal; the chest is deeper and more capacious; and the brain and nerves are more highly developed. More air is respired, more blood purified, more nervous energy expended.—Whilst the heavy cart-horse may be considered to possess the lymphatic temperament, the blood horse may be regarded as the emblem of the nervous and sanguine temperament combined; the latter, however, predominating. When the nervous temperament has the ascendance, the animal will carry but little flesh, but will go till he drops, never seeming to tire. He will, however, take too much out of himself, become thinner, and is what is called a hot horse. When the sanguine temperament greatly prevails, the horse will have great muscular powers, but not much inclination to put them to the stretch. When the lymphatic tem-

perament has superior influence, the animal, though looking fresh and fat, and starting well at first, will soon flag and knock up, and will rather endure the lash than make an extra exertion. It is the happy combination of these three temperaments that make a perfect horse, when severe exertion is demanded. The full development of the abdominal organs is essential, inasmuch as it is through the food that both the muscular system and the nervous energy is furnished. If the digestion is weak, the other powers will be inefficiently supplied. The sanguineous organs are needed to furnish the muscular powers, and the nervous system is demanded to furnish the muscles with the requisite energy and capability of endurance. What is called *bottom* in the horse, is neither more nor less than the abundant supply of nervous energy, the muscles being at the same time well developed.

There are two errors commonly committed by persons selecting animals from which to breed. Some pay too much attention to pedigree, and too little to form, spirit, etc. The correct theory is, though form and character is of primary importance, the blood should never be neglected. The great point to be aimed at in a horse for all work, is the combination in the same animal, of maximum of speed, compatible with sufficient size, bone, strength, and solid power, to carry heavy weights, draw large loads, and to secure to the stock the probability of not inheriting deformity or disease from either parent. Breed as much as possible with pure blood, of the right kind, and breed what is technically called up, not down, that is to say, by breed-

ing the mare to a male of superior, not inferior blood to herself; except where it is desired to breed like to like, as Morgan to Morgan, for the purpose of perpetuating a pure stream of any particular variety which is needful. A half-breed mare should never be put to a half-breed stallion, as in that case the product in nine cases out of ten degenerates below the dam, whereas if she be bred to a thorough-bred stallion, the product will be superior. And the error is, to breed from mares that have become noted for their speed. Some persons will pick up some long-legged, rangy, broken down, trotting mare, which could perhaps trot her mile in 2.30, thinking to produce something very fine. Nothing can be more ill-judged, as in the majority of instances it is sure to end in disappointment. A mare, with all the best blood in her veins, if she has not got good shape and good points, is not fit for a stallion.

And the great and common error in breeding, is to cross a compact dam with a large sire, the object being to increase the size of the offspring above that of the dam; the result is almost sure to end in disappointment. This has been attempted in England, and has proved a failure. The rule deduced from experience, is, the dam must be as large or larger than the sire.—This *is a historical fact.* The history of breeding shows that to improve a breed, we must select the best formed, largest mares, and cross them with medium sized, compact, muscular stallions.

Size is not the measure of power. Some horses that weigh 900 lbs. will exceed in strength and endurance others of 1,200 lbs., or more; and of those horses that have distinguished themselves as trotters, a large

majority have been of medium size. Shortness of legs with compactness of form is indispensable to great endurance. The size of the muscles of a horse, other things being equal, determines his power. In selecting a stallion, aim to get one that excells in the points that the mare is deficient in, and you wish to avoid in the offspring. Let him exhibit courage and endurance, rather than speed. No one stallion is best adapted to all mares; determine, with a matured judgment, which class of animals your mare is best calculated to produce, whether a roadster, coach horse, or draught animal, and having determined this, use a stallion best calculated to produce the thing reasonably expected, bearing in mind the rule that "like will produce like." Breeding, to be successful, must be a matter of study. One point, says Youatt, is, absolutely essential, it is "compactness"—as much goodness and strength as possible, condensed into a little space.

Next to compactness, the inclination of the shoulder will be regarded. A huge stallion, with upright shoulders, never got a capital hunter or hackney. From him the breeder can obtain nothing but a cart or dray horse, and that, perhaps, spoiled by the opposite form of the mare. On the other hand, an upright shoulder is desirable, if not absolutely necessary, when a mere slow draught-horse is required.

The condition of the stallion, is too often overlooked by the most of our farmers. By condition is not meant a high state of fatness, but on the contrary, it indicates the greatest health and strength, reducing all superfluous fat, bringing the flesh into clear, hard,

and powerful muscles. Too many farmers are content with the form and figure of a horse, without regard to condition.

A remarkable case occurred in England, some years since. George the IV. owned, and was in the habit of riding as a hunter, a horse of unequaled excellence. His Royal Highness caused a few of his mares to be bred to him in the spring, after he had been kept in the highest condition as a hunter throughout the winter, and the produce, on growing up, proved every way worthy of their sire. When His Royal Highness became seriously engaged in the cares of Government, and therefore relinquished the pleasures of the chase, being desirous to perpetuate the fine qualities of this stock, he ordered the horse to be kept at Windsor for public covering, provided the mares should be of the first quality; and in order to insure a sufficient number of these, directed the head groom to keep him exclusively for such, and to make no charge, with the exception of the customary groom's-fee of half a guinea each. The groom, anxious to pocket as many half guineas as possible, published His Royal Highness's liberality, and vaunted the qualities of the horse, in order to persuade all he could to avail themselves of the benefit. The result was, the horse being kept without his accustomed exercise and in a state of repletion, and serving upwards of a hundred mares yearly, the stock, although tolerably promising in their early age, shot up into lank, weakly, awkward, leggy, good-for-nothing creatures, to the entire ruin of the horse's character as a sire—until some gentlemen, aware of the

cause, took pains to explain it, proving the correctness of their statements by reference to the first of the horse's get, produced under a proper system of breeding, and which were then in their prime, and among the best horses in England.

"In selecting a mare," says Youatt, "it is perhaps more difficult to select a good mare to breed from than a good horse, because she should possess somewhat opposite qualities. Her carcase should be long, in order to give room for the growth of the fœtus, and yet with this there should be compactness of form and shortness of leg. In frame, the mare should be so formed as to be capable of carrying and well nourishing her offspring; that is, she should be what is called 'roomy.' There is a formation of the hips which is particularly unfit for breeding purposes, and yet which is sometimes carefully selected, because it is considered elegant; this is the level and straight hip, in which the tail is set on very high, and the end of the haunch bone is nearly on a level with the projection of the hip bone. Nearly the opposite form is the more desirable. She requires such a shape and make as is well adapted for the purpose she is intended for," that is to say, for producing colts of the style and form she is intended to produce. We will add, that she must have four good legs under her, and those legs standing as a foundation on four good, well shaped, *large* feet, opened-heeled and by no means flat-soled. That she should have a good, lean, bony head, small cased, broad fronted, well set on, upon a high, well carved neck, thin at its

junction with the head; high withers, thin shoulders, and, above all, long, sloping shoulders. A straight shoulder is an abomination; it renders speed impossible, and gives a rigid, inflexible motion, often producing the bad fault of stumbling. She should be wide-chested and deep in the heart place. Her quarters should be strong, well let down, long and sickle-shaped above the hocks. It is better that she go with her hocks somewhat too wide apart than too near together—the former point indicating power, the latter weakness, of a bad kind. It has been shown that a breed mare may, nay, *should* be considerable longer in the back than one would choose a working horse to be, but if she be particularly so, it is desirable to put her to a particularly short-backed and close-coupled horse.

The next thing to be observed by the horse-breeder, in raising stock of any kind, after the blood and form of the mare and the qualities of the stallion, is the temper and condition of the dam. The former, because nothing is more decidedly transmissible in the blood than temper; the second, because, unless she is in good health and vigor, it is impossible that she can produce vigorous and healthy offspring.

The first time a mare is to be covered, it is of the utmost importance that the stallion should be the best that can be procured, as instances have been known where the stallion having possessed some striking points, the colts of the mare have shown those points for several colts after, though a different stallion was used.

Under no possible circumstances breed from a stallion which has any affection of any kind of the respiratory organs, whether seated in the lungs or in the windpipe, or from one which has any affection of the eyes, unless it be the direct result of an accident, such as a blow or a puncture, nor even then, if the accident, having occurred to one eye, the other has sympathetically followed suit; and, on the other side, we should say on no account breed from a mare affected in either way, unless she be possessed of some excellences so extraordinary and countervailing, that for the sake of preserving the stock one would be willing to run some risk of having a worthless animal for his own use, in the hope of possibly having one free from the dreaded defect and of superlative excellence.

Previous to sending the mare to the horse she should be got into the most perfect state of health and condition, by moderate exercise, abundance of good, nutritous food and warm stabling. It is not desirable that she should be in a pampered state produced by hot stables or extraordinary clothing, that she should have the short fine coat or the blooming and glowing condition of the skin, for which one would look in a racehorse about to contend for a four mile heat—not that she should be in that wiry form of sinew and steel-like hardiness of muscle, which is only the result of training. Still less desirable is it she should be overloaded with fat, especially that soft fat generated by artificial feeding.

The temper is of great importance, by which must

be understood, not that gentleness at grass, which may lead the breeder's family to pet the mare, but such a temper as will serve for the purpose of the rider, and will answer to the stimulus of the voice, whip or spur. A craven or a rogue is not to be thought of as the mother of a family; and if a mare belong to a breed which is remarkable for refusing to answer to the call of the rider, she should be consigned to any task rather than the stud farm. Sulkiness and savageness are likewise to be avoided, whether in stallion or mare. From the time of covering, to within a few days of the expected period of foaling, the cart-mare may be kept at moderate labor, not only without injury, but with decided advantage. It will then be prudent to release her from work, and keep her near home, and under the frequent inspection of some careful person. When nearly half the time of pregnancy has elapsed, the mare should have a little better food. She should be allowed one or two feeds of grain in the day. This is about the period when they are accustomed to slink their foals, or when abortion occurs: the eye of the owner should, therefore, be frequently, upon them. Good feeding and moderate exercise will be the best preventives of this mishap. The mare that has once aborted, is liable to a repetition of the accident, and therefore should never be suffered to be with other mares between the fourth and fifth months: for such is the power of imagination or of sympathy in the mare, that if one suffers abortion, others in the same pasture will too often share the same fate. Farmers

wash, and paint, and tar their stables, to prevent some supposed infection;—the infection lies in the imagination.

When the period of parturition is drawing near, she should be watched and shut up during the night in a safe yard or loose box.

If the mare, whether of the pure or common breed, be thus taken care of, and be in good health while in foal, little danger will attend the act of parturition. If there is false presentation of the fœtus, or difficulty in producing it, it will be better to have recourse to a well-informed practitioner, than to injure the mother by the violent and injurious attempts that are often made to relieve her.

The parturition being over, the mare should be turned into some well-sheltered pasture, with a hovel or shed to run into when she pleases; and if she has foaled early, and grass is scanty, she should have a couple of feeds of grain daily. The breeder may depend upon it, that nothing is gained by starving the mother and stinting the foal at this time. It is the most important period of the life of the horse; and if, from false economy, his growth is arrested, his puny form and want of endurance will ever afterwards testify the error that has been committed. The grain should be given in a trough on the ground, that the foal may partake of it with the mother. When the new grass is plentiful, the quantity of corn may gradually be diminished.

The mare will usually be found again at heat at or

before the expiration of a month from the time of foaling, when, if she is principally kept for breeding purposes, she may be put again to the horse. At the same time, also, if she is used for agricultural purposes, she may go again to work. The foal is at first shut in the stable during the hours of work; but as soon as it acquires sufficient strength to toddle after the mare, and especially when she is at slow work, it will be better for the foal and the dam that they should be together. The work will contribute to the health of the mother; the foal will more frequently draw the milk, and thrive better, and will be hardy and tractable, and gradually familiarized with the objects among which it is afterwards to live. While the mother, however, is thus worked, she and the foal should be well fed; and two feeds of corn, at least, should be added to the green food which they get when turned out after their work, and at night.

In four or six months, according to the growth of the foal, it may be weaned, and the mother should be put to harder work, and have drier food: One or two urine-balls, or a physic ball, would be useful in the milk, should she be troublesome or pine after the foal.

Mares frequently produce colts, at fourteen and fifteen years of age, and sometimes twenty. Experience has proved that from six to twelve, is the most valuable part of a mare's life for raising colts. They are frequently incapacitated by breeding too young.

BREEDING FANCY COLORS.

The following is taken from a correspondent in the Albany Cultivator; as to the correctness of the theory we cannot vouch: "In order to obtain a cream colored colt from a bay horse out of a bay mare, I tried the following experiment, which proved entirely successful: a cream stud was first led out and used to tease the mare. After putting blinds on the mare, the cream was taken out of the way, and the bay horse used to cover the mare, and not seen by her, but immediately returned to the stable, and the cream colored horse led right in front of her, and exposed to her view for some time." This may be attributable to the nervous influence of the dam, or what is called the influence of the imagination of the dam on the fœtus. It may have been something akin to this, by the influence of which, through the medium of peeled rods, Jacob caused the cattle to be born ringed streaked and spotted.

REARING AND MANAGEMENT OF COLTS.

Colts should be taken from the dam when about six months old, if in a good condition, and shut up in a house loose, or in a small yard, (if the yard is large they are likely to run themselves poor,) with a fence that they cannot leap. It is at this time they usually acquire the habit of leaping which follows them through life. They should be kept out of sight and hearing of the dam, as much as possible. They may be allowed to re-join each other once a day, for a short time, in or-

der that the foal may empty the udder, and not be suddenly deprived of its natural food.

They should be fed with oat meal and sweet apples sliced; about two pints of the former, and two quarts of the latter, three times a day, with a sufficiency of good timothy hay. They should eat out of a manger about as high as they naturally hold their heads—a stable with earth foundation, kept dry with straw,—chaff, or leaves is preferable—if on a stable floor, their dung should remain with occasionally leveling off, and provided with linter—they should be let out daily for exercise, and should not be tied in the stable. Continue this feed through the winter. If fed oats, they should be soaked.

There is no period which is of more importance than the first winter. We frequently see very promising colts make poor horses from want of proper management when young. They should on no account be allowed to get poor while growing, unless it be on grass when three years old, for a short time this is thought by some to be beneficial. No investment that the farmer can make will pay better than keeping colts in a good condition. On the other hand they should not be too fat, nor forced to maturity too soon, or you may give them a kind of hot-bed growth.

BRIEF EXPLANATION OF TERMS.

ACTION.—The paces of a horse. These may be greatly improved by judicious bitting and riding.

ARRESTS, OR ARRETS.—A term given by farriers to a scurfiness of the back part of the hind-leg.

BACKING.—Mounting a colt or filly for the first time.

BISHOPING.—Artificial marks in a horse's teeth, to give the appearance of greater youth. In allusion to the name of the man who was the first to prctice the trick.

BREAKING DOWN.—An accident that often happens in racing, hunting, and other violent exercises.

BRIDLE-HAND.—The left is called the bridle-hand, in contradistinction to the right, which is termed the whip-hand.

BUCK EYES.—A term used by dealers and jockeys, for bad eyes.

CAPPED HOCK.—A swelling on the point of the horse's hock, generally occasioned by blows in kicking.

CONDITION.—This term is used to imply a horse being in perfect health, or as Mr. Taplin says, "fine in coat, firm in flesh, high in spirits, and fresh upon his legs."

CRADLE.—A sort of wooden neck-lace, made to hinder horses from biting their legs when sore.

FEATHER.—A mark in the horse's forehead or neck, made by the turn of the hair. It is considered ornamental, and, by some, as an indication of good qualities.

FEEL.—To feel a horse in the hand, is to observe that he obeys the directions given by the bridle, and bears upon the bit. To feel a horse upon his haunches, is to observe that he plies THEM and does not lean on the shoulders.

GAUNT-BELLIED.—A term applied to a horse when he is drawn up in the flank.

IN HAND.—Keeping a complete command of the horse by both the reins and the pressure of the legs.

HAND.—The division in the standard of measuring horses is thus named. A hand is four inches.

PACE.—The paces of the horse are the walk, the amble, the trot, the canter, and the gallop.

PATTERING—Walking with a mincing gait.

ROMPING.—Throwing about the feet in the paces.

SCRAMBLING.—Using the leg from the knee as if catching at something.

TRAINING —By the word training is meant putting a horse in that state in which all the functions of the body are carried on with vigor.

CHAPTER III.

THE AMERICAN ART OF TAMING, AND BREAKING HORSES.

ORIGINALLY SYSTEMATIZED AND PRACTICED BY JOHN S. RAREY.

ITS HISTORY.

The first person of whom we have any knowledge as practising horse-taming was a Moor, and was a man of immense muscular power, and upon this, in a contest with a horse he depended for success.

The second horse-tamer was called JUMPER, and lived in Yorkshire, England. Of the power of JUMPER over the horse, Mr CASTLY relates the following incident:—"When a young man purchased a horse at a fair that was offered very cheap, because he was unmanageable. No body could ride him. He objected to having anything upon his back, and when made to move forward with nothing but a saddle on him, he would throw himself down upon his side with great violence and roll over. JUMPER took this animal away and in ten days brought him back again, in as good condition, but perfectly subdued and almost as obedient as a dog—he would lie down at this man's bidding, and only raise at his command, and would carry double or anything. I took to riding him myself, and may say, that I was never better carried for six or eight months, during which time he never showed the least vice whatever. I sold him to a Lincolnshire farmer, who said he would give him a summer's run to grass, and shew him a very fine horse at the great Horncastle Horse Fair.

Next upon the stage, we find SULLIVAN, the "Whisperer."—This man is described in CROKER'S "*Fairy Legends and Traditions of Ireland*," as follows:—"He was an awkward, ignoran-

rustic of the lowest class; his occupation, horse-breaking. The nickname of 'Whisperer' he acquired from the vulgar notion of his being able to communicate to the animal what he wished by means of a whisper, and the singularity of his method seemed in some degree to justify the attribute. In his own neighborhood, the notority of the fact made it seem less remarkable, but I doubt if any instance of similar subjugating talent is to be found on record. As far as the sphere of his control extended, the boast of *veni, vidi, vici*, was more justly claimed by SULLIVAN than by CÆSAR himself." How SULLIVAN acquired the art, and in what it consisted, will be forever unknown, as he died in 1810, without divulging it.

Of the first two mentioned—, the MOOR and the JUMPER,—their skill doubtless lay in manual strength, as it was often noticed that, after an interview with the animal practiced upon, both horse and experimenter were entirely exhausted. SULLIVAN performed with wondrous celerity,—his movements were secret, but without apparent coercion. Every description of horse or mule, whether previously broken or unhandled, whatever their peculiar vices or habits might have been, submitted without show of resistance to the magical influence of his art, and in the short space of half an hour became gentle and tractable, and the effect seemed to be durable.

We come now to the horse-tamer of the present day, J. S. RAREY, who has performed such astonishing feats, and created such excitement and interest as was never before known in this country or England. In the opening of his process, he says:—"The one principle which you must establish firmly in your mind, and which is so essential in horse-taming that it is almost the corner stone of the theory, is the law of kindness. Next to kindness you must have patience, and next to patience indomitable perseverance. In a natural state he is afraid of man, and never, until you teach him that you do not intend to hurt him, will that fear cease—we mean that wild, natural fear—for you must have him fear you as well as love you, before you can absorb his attention as much as is necessary to break him to your liking."

"The horse, according to the best accounts we can gather, has been the constant servant of man for nearly four thousand years, ever rewarding him with his labor, and adding to his comfort in proportion to his skill and manner of using him; but being, to those who govern him by brute force, and know nothing of the beauty and delight to be gained from the cultivation of his finer nature, a fretful, vicious, and often dangerous servant; while to

the Arab, whose horse is the pride of his life, and who governs him by the law of kindness, we find him to be quite a different animal. The manner in which he is treated from a foal gives him an affection and attachment for his master not known in any other country. The Arab and his children, the mare and her foal, inhabit the tent together; and although the colt and the mare's neck are often pillows for the children to roll upon, no accident ever occurs, the mare being as careful of the children as of the colt. Such is the mutual attachment between the horse and his master, that he will leave his companions at his master's call, ever glad to obey his voice. And when the Arab falls from his horse, and is unable to rise again, he will stand by him and neigh for assistance, and if he lies down to sleep, as fatigue sometimes compels him to do in the midst of the desert, his faithful steed will watch over him, and neigh to arouse him, if man or beast approaches.

THREE FUNDAMENTAL PRINCIPLES.

FIRST.—That he is so constituted by nature that he will not offer resistance to any demand made of him, which he fully comprehends, if made in any way consistent with the laws of his nature.

SECOND.—That he has no consciousness of his strength beyond his experience, and can be handled according to our will, without force.

THIRD.—That we can, in compliance with the laws of his nature, by which he examines all things new to him, take any object, however frightful, around, over or on him, that does not inflict pain, without causing him to fear.

First, Some of the reasons why I think he is naturally obedient and will not offer resistance to anything fully comprehended.—The horse, though possessed of some faculties superior to man's, being deficient in reasoning powers, has no knowledge of right or wrong, of free will and independent government, and knows not of any imposition practiced upon him, however unreasonable these impositions may be. Consequently he cannot come to any decision what he should or should not do, because he has not the reasoning faculties of man to argue the justice of the thing demanded of him. If he had, taking into consideration his superior strength, he would be useless to man as a servant. Give him *mind* in proportion to his strength, and he will demand of us the green field for his inheritance, where he will roam at leisure, denying the right of servitude at all. God has wisely formed his nature so that it can be operated upon by the knowledge of

man according to the dictates of his will, and he might well be termed an unconscious, submissive servant. This truth we can see verified in every day's experience by the abuses practiced upon him. Any one who chooses to be so cruel, can mount the noble steed and run him till he drops with fatigue, or, as is often the case with the more spirited, falls dead beneath the rider. If he had power to reason, would he not vault and pitch his rider, rather than to suffer him run him to death? Or would he condescend to carry at all the vain impostor, who, with but equal intellect, was trying to impose on his equal rights and equally independent spirit? But, happily for us, he has no consciousness of imposition, no thought of disobedience, except by impulse caused by the violation of the law of his nature: consequently, when disobedient, it is the fault of man.

Second—The fact of the horse being unconscious of the amount of his strength, can be proven to the satisfaction of any one. For instance, such remarks as these are common, and perhaps familiar to your recollection. One person says to another, "If that wild horse there was conscious of the amount of his strength, his owner would have no business with him in that vehicle--such light reins and harness, too: if he knew, he could snap them asunder in a minute, and be as free as the air we breathe, they would no more resist his powerful weight and strength than a cotton thread would bind a strong man."

Third—He will allow any object, however frightful in appearance, to come around, over or on him, that does not inflict pain.

We know, from a natural course of reasoning, that there has never been an effect without a cause: and we infer from this that there can be no action, either in animate or inanimate matter, without there first being some cause to produce it. And from this self-evident fact, we know there is some cause for every impulse or movement, of either mind or matter. Then, according to this theory, there must be some cause before fear can exist; from the effect of imagination, and not from the infliction of real pain, it cannot be removed by complying with those laws of nature by which the horse examines an object, and determines upon its innocence or harm.

A log or stump by the road side may be, in the imagination of the horse, some great beast about to pounce upon him; but after you take him up to it, and let him stand by it a little while, and touch it with his nose, and go through his process of examination, he will not care anything more about it. And the same principle and process will have the same effect with any other object, how-

ever frightful in appearance, in which there is no harm. Take a boy that has been frightened with a false face, or any other object that he could not comprehend at once, but let him take that face or object in his hands, and examine it, and he will not care anything more about it. This is a demonstration of the same principle.

With this introduction to the principles of my theory, I shall next attempt to teach you how to put it into practice, and whatever instructions may follow, you can rely on as having been proven practically by my own experiments. And knowing from experience just what obstacles I have met with in handling bad horses, I shall try to anticipate them for you, and assist you in surmounting them.

TAMING VICIOUS HORSES.

The horse should be led into a close stable, the operator should be previously provided with a stout leather halter: a looped strap to slip over the horse's knee; a strong ci rsingle, and a long and short strap—the first to fasten round the fore-foot which is at liberty, and the second to permantely secure the leg which is looped up.

The application of the straps will be better understood by reference to the engraving.

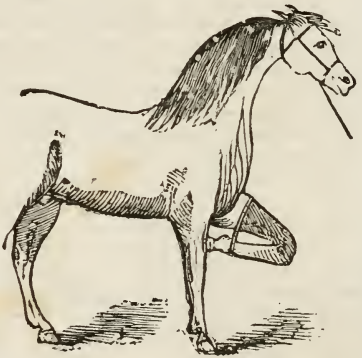


Fig. 1. *First position.*

In the first place, if the horse be a biter, muzzle him; then lift and bend his left fore leg, and slip a loop over it. Fig. 1. Next put on a cirsingle, and fasten the long strap around the right foot, just above the hoof, and pass the end through a loop attached to the cirsingle. Fig. 2. Then fasten on a couple of knee-pads; (these can be put on in the first place if convienent:) the pads will prevent the horse injuring or abrading his knees as he falls. When this portion of the business is complete you are ready for active operations. Take a short hold of the long strap with your right hand standing on the left side of the horse, and grasp the bit in the left hand.

The object now is to back the horse about the stable until he is tired and evidently wishes to lie down, bear your weight firmly against his shoulder then compel him to move forward, and when he lifts the off foot for that purpose, draw upon the strap fastened around that leg, thus elevating it to a like position with its mate. The procedure is portrayed in our second engraving As soon as this strap is drawn tightly, let the animal down easily upon his knees, as in fig. 3. This is a critical period and the operator must possess coolness and energy to prevent disaster to himself or the animal.

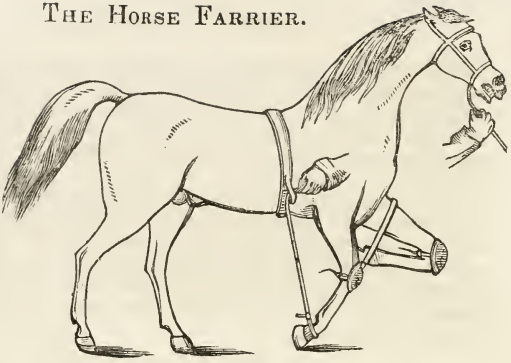


Fig. 2. Teaching the horse to kneel.

When the horse attempts to rise, pull his head around towards the shoulder and his efforts will prove futile. Bear your weight against his hips, not hard, but with a steady, equal pressure, and by voice and action endeavor to give an idea of your wishes, and in about ten minutes he will lie down.

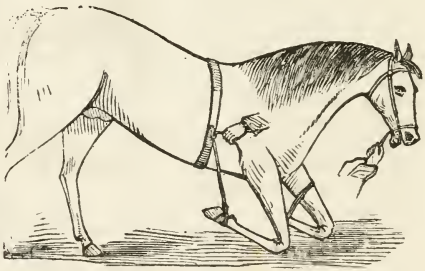


Fig. 3. The horse in a kneeling posture preparatory to lying down.

When he is down, keep the strap tight in your hand, so that he cannot straighten his legs, and pull his head towards his shoulders to prevent his rising. As soon as he is done struggling, caress his face and neck, remove the strap and straighten his legs. Render yourself as familiar as possible.

Fig. 4. Lying down and subdued.

Handle all parts of his body. After he has lain fifteen or twenty minutes, let him rise and immediately repeat the operation. After throwing him two to five times, he will become as submisive as a well trained dog and you need not be afraid to indulge in any liberties with him.

If a thorough course of instructon is given—*and he must be educated: no boy's play about it*—he will seek the floor if you simply raise the fore-leg and give the command, "lie down, sir." When this is learned, tap him on the opposite leg with a stick, as you take hold of his foot, and in a short time he will lie down from the motion of the stick. If the horse is very powerful or fractious, the straps should be very strong and broad, and well secured in such a manner as not to chafe the legs. An incorrigible horse should have two lessons a day. We give the following rules, simply remarking that their *strict observance is imperative:*

First—The horse must not be forced down by violence, but must be tired out till he has a strong desire to lie down.

Second—He must be kept quiet on the ground until the expression of the eye shows that he is tranquilized, which invariably takes place by patiently waiting and gently patting the horse.

Third—Care must be taken not to throw the horse upon his neck when bent, as it may easily be broken

Fourth—In backing him. no violence must be used, or he may be forced on his haunches and his back broken.

Fifth—The halter and off-rein are held in the left hand, so as to keep the head away from the latter; while, if the horse attempts to plunge, the halter is drawn tight, when, the off leg being raised, the animal is brought on his knees, and rendered powerless.

HOW TO SUCCEED IN GETTING COLT'S FROM PASTURE.

Go to the pasture, and walk around the whole herd quietly, and at such a distance as not to cause them to scare or run. Then approach them very slowly and if they seem to be frightened,

hold on until they become quiet, so as not to make them run before you are close enough to drive them in the direction you want them to go. And when you begin to drive, do not flourish your arms, or halloo, but gently follow them off, leaving the direction free for them that you wish them to take. Thus taking advantage of their ignorance, you will be able to get them in the pound as easily as the hunter drives the quails into his net. For, if they have always run in the pasture uncared for, (as many horses do in prairie countries, and on large plantations,) there is no reason why they should not be as wild as the sportsman's birds, and require the same gentle treatment, if you want to get them without trouble; for the horse, in his natural state, is as wild as any of the undomesticated animals, though more easily tamed than most of them.

HOW TO STABLE A COLT WITHOUT TROUBLE.

The next step will be, to get the horse into a stable or shed. This should be done as quietly as possible, so as not to excite any suspicion in the horse of any danger befalling him. The best way to do this is to lead a gentle horse into the stable first, and hitch him; then quietly walk around the colt, and let him go in of his own accord. It is almost impossible to get men who have never practiced on this principle, to go slow and considerate enough about it. They do not know that, in handling a wild horse, above all other things is that good old adage true, "haste makes waste;" that is, waste of time, for the gain of trouble and perplexity.

One wrong move may frighten your horse, and make him think it necessary to escape at all hazards for the safety of his life, and thus make a two hours' work of a ten minutes' job; and this would be all your fault, and entirely unnecessary; for he will not run unless you run after him, and that would not be good policy, unless you knew that you could outrun him; for you will have to let him stop of his own accord after all. But he will not try to break away, unless you attempt to force him into measures. If he does not see the way at once, and is a little fretful about going in, do not undertake to drive him, but give him a little less room outside, by gently closing in around him. Do not raise your arms, but let them hang at your side; for you might as well raise a club. If he attempts to turn back, walk before him, but do not run; and if he gets past you, encircle him again in the same quiet manner, and he will soon find that you are not going to hurt him; and then you can walk so close around him that he will go into the stable for more room, and to get farther from you. As soon as he is in, remove the quiet horse and shut the door. This will be his first notion of confinement—not knowing how he got in such a place, nor how he got out of it. That he may take it as quietly as possible, see that the stable is entirely free from dogs, chickens, or anything that would annoy him; then give him a few ears of corn, and let him remain alone fifteen or twenty minutes, until he has examined his apartment, and has become reconciled to his confinement.

THE KIND OF HALTER.

Always use a leather halter, and be sure to have it made so that it will not draw tight around his nose, if he pulls on it. It should be of the right size to fit his head easily and nicely, so that the nose-band will not be too tight or too low. Never put a rope halter on an unbroken colt, under any circumstances whatever. They have caused more horses to hurt or kill themselves, than would pay for twice the cost of all leather halters that ever have been needed for the purpose of haltering colts. It is almost impossible to break a colt that is very wild with a rope halter, without having him pull, rear, and throw himself, and thus endanger his life; and I will tell you why. It is just as natural for a horse to try to get his head out of anything that hurts it, or feels unpleasant, as it would be for you to try to get your hand out of a fire. The cords of the rope are hard and cutting; this makes him raise his head and draw on it, a slip-noose, (the way the halters are always made,) tightens, and pinches his nose, and then he will struggle for life, until, perchance, he throws himself; and who would have his horse throw himself, and run the risk of breaking his neck, rather than pay the price of a leather halter? But this is not the worst. A horse that has once pulled on his halter, can never be as well broken as one that has never pulled at all.

REMARKS ON THE HORSE.

But before we attempt to do anything more with the colt, I will give you some of the characteristics of his nature, that you may better understand his motions.

Every one that has ever paid any attention to the horse, has noticed his natural inclination to smell of everything which to him looks new and frightful. This is their strange mode of examining everything. And, when they are frightened at anything, though they look at it sharply, they seem to have no confidence in this optical examination alone, but must touch it with the nose before they are entirely satisfied; and as soon as this is done, all is right.

EXPERIMENT WITH THE ROBE.

If you want to satisfy yourself of this characteristic of the horse, and learn something of importance concerning the peculiarities of his nature, etc., turn him into the barnyard, or a large stable will do. And then gather up something that you know will frighten him; a red blanket, buffalo robe, or something of that kind. Hold it up so that he can see it, he will stick up his head and snort. Then throw it down somewhere in the centre of the yard or barn, and walk off to one side. Watch his motions, and study his nature. If he is frightened at the object, he will not rest until he has touched it with his nose. You will see him begin to walk around the robe and snort, all the time getting a little closer, as if drawn up by some magic spell, until he finally gets within reach of it. He will then very cautiously stretch out his neck as far as he can reach, nearly touching it with his nose, as though he thought it was ready to fly at him. But after he has repeated these touches a few times, for the first, (though he has been looking at it all the time,) he seems to have an idea of what it is. But now he has found, by the sense

of feeling, that it is nothing that will do him any harm, and he is ready to play with it.

Yet the horse is never so well satisfied when he is about anything that has frightened him, as when he is standing with his nose to it. And in nine cases out of ten, you will see some of that wild look about him again, as he turns to walk from it. And you will probably see him looking back very suspiciously as he walks away, as though he thought it might come after him yet. And in all probability, he will have to go back and make another examination before he is satisfied. But he will familiarize himself with it, and if he should run in that yard a few days, the robe that frightened him so at first, will be no more to him than a familiar stump.

SUPPOSITIONS ON THE SENSE OF SMELLING.

We might very naturally suppose, from the fact of the horse's applying his nose to everything new to him, that he always does so for the purpose of smelling these objects. But I believe that it is as much or more for the purpose of feeling, and that he makes use of his nose, or muzzle, (as it is sometimes called,) as we would our hands; because it is the only organ by which he can touch or feel anything with much susceptibility.

I believe he invariably makes use of the four senses, seeing, hearing, smelling and feeling, in all of his examinations, of which the sense of feeling is, perhaps, the most important. And we know from experience, that if a horse sees and smells a robe a short distance from him, he is very much frightened, (unless he is used to it,) until he touches or feels it with his nose; which is a positive proof that feeling is the controlling sense in this case.

POWEL'S SYSTEM OF APPROACHING THE COLT.

But before we go further, I will give you Willis J. Powel's system of approaching a wild colt, as given by him in a work published in Europe, about the year 1814, on the "Art of taming wild horses." He says, "A horse is gentled by my secret in from two to sixteen hours. The time I have most commonly employed has been from four to six hours." He goes on to say: "Cause your horse to be put in a small yard, stable, or room. If in a stable or room, it ought to be large, in order to give him some exercise with the halter before you lead him out. If the horse belongs to that class which appears only to fear man, you must introduce yourself gently into the stable, room, or yard, where the horse is; he will naturally run from you, and frequently turn his head from you; but you must walk about extremely slow and softly, so that he can see you whenever he turns his head towards you, which he never fails to do in a short time, say in a quarter or half an hour. I never knew one to be much longer without turning towards me.

"At the very moment he turns his head, hold out your left hand towards him, and stand perfectly still, keeping your eyes upon the horse, watching his motions, if he makes any. If the horse does not stir for ten or fifteen minutes, advance as slowly as possible, and without making the least noise, always holding out your left hand, without any other ingredient in it than what nature put in it." He says, "I have made use of certain ingredients before people, such as the sweat under my arm, etc., to disguise the real secret, and many believed that the docility, to which the horse arrived in so short a time, was owing to these ingredients;

but you see from this explanation that they were of no use whatever. The implicit faith placed in these ingredients, though innocent of themselves, becomes "faith without works." And thus men remained always in doubt concerning the secret. If the horse makes the least motion when you advance towards him, stop, and remain perfectly still until he is quiet. Remain a few moments in this condition, and then advance again in the same slow and almost imperceptible manner. Take notice; if the horse stirs, stop, without changing your position. It is very uncommon for the horse to stir more than once after you begin to advance, yet there are exceptions. He generally keeps his eyes steadfast on you, until you get near enough to touch him on the forehead. When you are thus near to him, raise, slowly, and by degrees, your hand, and let it come in contact with that part just above the nostrils as lightly as possible. If the horse flinches, (as many will,) repeat with great rapidity these light strokes upon the forehead, going a little further up towards his ears by degrees, and descending with the same rapidity until he will let you handle his forehead all over. Now let the strokes be repeated with more force over all his forehead, until you can handle that part with equal facility. Then touch in the same light manner, making your hands and fingers play around the lower part of the horse's ears, coming down now and then to his forehead, which may be looked upon as the helm that governs all the rest.

"Having succeeded in handling his ears, advance towards the neck, with the same precautions, and in the same manner; observing always to augment the

force of the strokes whenever the horse will permit it. Perform the same on both sides of the neck, until he lets you take it in your arms without flinching.

"Proceed in the same progressive manner to the sides, and then to the back of the horse. Every time the horse shows any nervousness, return immediately to the forehead as the true standard, patting him with your hands, and from thence rapidly to where you had already arrived, always gaining ground a considerable distance farther on, every time this happens. The head, ears, neck, and body being thus gentled, proceed from the neck to the root of the tail.

"This must be managed with dexterity, as a horse is never to be depended on that is skittish about the tail. Let your hand fall lightly and rapidly on that part next to the body a minute or two, and then you will begin to give it a slight pull upwards every quarter of a minute. At the same time you continue this handling of him, augment the force of the strokes as well as the raising of the tail, until you can raise it and handle it with the greatest ease, which commonly happens in a quarter of an hour in most horses, in others almost immediately, and in some much longer. It now remains to handle all his legs; from the tail come back again to the head, handle it well, as likewise the ears, breast, neck, etc., speaking now and then to the horse. Begin by degrees to descend to the legs, always ascending and descending, gaining ground every time you descend, until you get to his feet.

"Talk to the horse; let him hear the sound of your voice, which at the beginning of the operation is not quite so necessary, but which I have always done in

making him lift up his foot. 'Hold up your foot'—at the same time lift his foot with your left hand. He soon becomes familiar with the sounds, and will hold up his foot at command. Then proceed to the hind feet, and go on in the same manner; and in a short time the horse will let you lift them and even take them in your arms.

"All this operation is no magnetism, no galvanism; it is merely taking away the fear a horse generally has of a man, and familiarizing the animal with his master; as the horse doubtless experiences a certain pleasure from this handling, he will soon become gentle under it, and show a very marked attachment to his keeper."

REMARKS ON POWEL'S TREATMENT—HOW TO GOVERN HORSES OF ANY KIND.

These instructions are very good, but not quite sufficient for horses of all kinds, and for haltering and leading the colt; but I have inserted it here because it gives some of the true philosophy of approaching the horse, and of establishing confidence between man and horse. He speaks only of the kind that fear man.

To those who understand the philosophy of horsemanship, these are the easiest trained; for when we have a horse that is wild and lively, we can train him to our will in a very short time; for they are generally quick to learn, and always ready to obey. But there is another kind that are of a stubborn or vicious disposition, and although they are not wild, and do not require taming, in the sense it is generally understood, they are just as ignorant as a wild horse, if not more so, and need to be learned just as much; and in order to have them obey quickly, it is very necessary that

they should be made to fear their master; for, in order to obtain perfect obedience from any horse, we must first have him fear us, for our motto is, *Fear, love, and obey;* and we must have the fulfillment of the first two, before we can expect the latter, and it is by our philosophy of creating fear, love and confidence, that we govern to our will every kind of horse whatever.

Then, in order to take horses as we find them, of all kinds, and to train them to our liking, we will alwasy take with us when we go into a stable to train a colt, a long switch whip, (whalebone buggy whips are the best, (with a good silk cracker, so as to cut keen and make a sharp report, which, if handled with dexterity, and rightly applied, accompanied with a sharp, fierce word, will be sufficient to enliven the spirits of any horse.

With this whip in your right hand, with the lash opinting backward, enter the stable alone. It is a great disadvantage in training a horse, to have any one in the stable with you; you should be entirely alone, so as to have nothing but yourself to attract his attention. If he is wild, you will soon see him in the opposite side of the stable from you; and now is the time to use a little judgment. I would not want, for myself, more than half or three-quarters of an hour to handle any kind of a colt, and have him running about in the stable after me; though I would advise a new beginner to take more time, and not be in too much of a hurry. If you have but one colt to gentle, and are not particular about the length of time you spend, and have not had any experience in handling colts, I would advise you to take Mr. Powel's method at first, till you gentle him, which, he says, takes from two to six hours.

But as I want to accomplish the same, and what is much more, learn the horse to lead in less than one hour, I shall give you a much quicker process of accomplishing the same end. Accordingly, when you have entered the stable, stand still and let your horse look at you a minute or two; and as soon as he is settled in one place, approach him slowly, with both arms stationary, your right hanging by your side, holding the whip as directed, and the left bent at the elbow, with your right hand projecting. As you approach him, go not too much towards his head or croup, so as not to make him move, either forward or backward, thus keeping your horse stationary; if he does move a little, forward or backward, step a little to the right or left very cautiously; this will keep him in one place. As you get very near him, draw a little to his shoulder, and stop a few seconds. If you are in his reach he will turn his head and smell of your hand, not that he has any preference for your hand, but because that is projecting, and is the nearest portion of your body to the horse. This all colts will do; and they will smell of your naked hand just as quick as of anything that you can put in it, and with just as good an effect, however much some men may have preached the doctrine of taming horses by giving them the scent of articles from the hand. I have already proved that to be a mistake. As soon as he touches his nose to your hand, caress him as before directed, always using a very light, soft hand, merely touching the horse, always rubbing the way the hair lies, so that your hand will pass along as smoothly as possible. As you stand by his side you may find it more convenient to rub his neck, or the

side of his head, which will answer the same purpose as rubbing his forehead. Favor every inclination of the horse to smell or touch you with his nose. Always follow each touch or communication of this kind with the most tender and affectionate caresses, accompanied with a kind look, and pleasant word of some sort, such as, "Ho! my little boy, ho! my little boy, pretty boy, nice lady!" or something of that kind, constantly repeating the same words, with the same kind, steady tone of voice; for the horse soon learns to read the expression of the face and voice, and will know as well when fear, love or anger prevails, as you know your own feelings; two of which, *fear and anger*, a good horseman *should never feel.*

How to proceed if your horse is of a stubborn disposition.

If your horse, instead of being wild, seems to be of a stubborn or *mulish* disposition; if he lays back his ears as you approach him, or turns his heels to kick you, he has not that regard or fear of man that he should have, to enable you to handle him quickly and easily; and it might be well to give him a few sharp cuts with the whip, about his legs, pretty close to the body. It will crack keen as it plies around his legs, and the crack of the whip will affect him as much as the stroke; besides, one sharp cut about his legs will affect him more than two or three over his back, the skin on the inner part of his legs or about his flank being thinner, more tender than on his back. But do not whip him much, just enough to scare him, it is not because we want to hurt the horse that we whip him,

we only do it to scare that bad disposition out of him. But whatever you do, do quickly, sharply, and with a good deal of fire, but always without anger. If you are going to scare him at all, you must do it at once. Never go into a pitch battle with your horse, and whip him until he is mad, and will fight you; you had better not touch him at all, for you will establish instead of fear and regard, feelings of resentment, ill-will and hatred. It will do him no good, but an injury, to strike a blow, unless you can scare him; but if you succeed in scaring him, you can whip him without making him mad; for fear and anger never exist together in the horse, and as soon as one is visible, you will find that the other has disappeared. As soon as you have frightened him so that he will stand up straight, and pay some attention to you, approach him again, and caress him a good deal more than you whipped him, then you will excite the two controlling passions of his nature, love and fear, and then he will love and fear you too, and as soon as he learns what to do, will obey quickly.

HOW TO HALTER AND LEAD A COLT.

As soon as you have gentled the colt a little, take the halter in your left hand and approach him as before, and on the same side that you have gentled him. If he is very timid about your approaching closely to him, you can get up to him quicker by making the whip a part of your arm, and reaching out very gently with the butt end of it; rubbing him lightly on the neck, all the time getting a little closer, shortening the whip by taking it up in your hand, until you finally get close enough to put your hands on him. If he is

inclined to hold his head from you, put the end of the halter strap around his neck, drop your whip, and draw very gently; he will let his neck give, and you can pull his head to you. Then take hold of that part of the halter which buckles over the top of his head, and pass the long side, or that part which goes into the buckle, under his neck, grasping it on the opposite side with your right hand, letting the first strap loose—the latter will be sufficient to hold his head to you. Lower the halter a little, just enough to get his nose into that part which goes around it, then raise it somewhat, and fasten the top buckle, and you will have it all right. The first time you halter a colt you should stand on the left side, pretty well back to his shoulder, only taking hold of that part of the halter which goes around his neck, then with your two hands about his neck you can hold his head to you, and raise the halter on it without making him dodge by putting your hands about his nose. You should have a long rope or strap ready, and as soon as you have the halter on, attach this to it, so that you can let him walk the length of the stable without letting go of the strap, or without making him pull on the halter, for if you only let him feel the weight of your hand on the halter, and give him rope when he runs from you, he will never rear, pull, or throw himself, yet you will be holding him all the time, and doing more towards gentling him than if you had the power to snub him right up, and hold him to one spot; because he does not know anything about his strength, and if you don't do anything to make him pull, he will never know that he can. In a few minutes you can begin to control him

with the halter, then shorten the distance between yourself and the horse, by taking up the strap in your hand.

As soon as he will allow you to hold him by a tolerably short strap, and step up to him without flying back, you can begin to give him some idea about leading. But to do this, do not go before and attempt to pull him after you, but commence by pulling him very quietly to one side. He has nothing to brace either side of his neck, and will soon yield to a steady, gradual pull of the halter; and as soon as you have pulled him a step or two to one side, step up to him and caress him, and then pull him again, repeating this operation until you can pull him around in every direction, and walk about the stable with him, which you can do in a few minutes, for he will soon think when you have made him step to the right or left a few times, that he is compelled to follow the pull of the halter, not knowing that he has the power to resist your pulling; besides you have handled him so gently that he is not afraid of you, and you always caress him when he comes up to you, and he likes that, and would just as leave follow you as not. And after he has had a few lessons of that kind, if you turn him out in a lot he will come up to you every opportunity he gets. You should lead him about in the stable some time before you take him out, opening the door, so that he can see out, leading him up to it and back again, and past it. See that there is nothing on the outside to make him jump when you take him out, and as you go out with him, try to make him go very slowly, catching hold of the halter close to the jaw with your left hand,

while the right is resting on the top of his neck, holding to his mane. After you are out with him a little while, you can lead him about as you please. Don't let any second person come up to you when you first take him out; a stranger taking hold of the halter would frighten him, and make him run. There should not even be any one standing near him to attract his attention, or scare him. If you are alone, and manage him right, it will not require any more force to lead or hold him than it would to manage a broke horse.

How to lead a colt by the side of a broke horse.

If you should want to lead your colt by the side of another horse, as is often the case, I would advise you to take your horse into the stable, attach a second strap to the colt's halter, and lead up your horse along side of him. Then get on the broke horse and take one strap around his breast, under his martingale, (if he has one on,) holding it in your left hand. This will prevent the colt from getting back too far; besides, you will have more power to hold him, with the strap pulling against the horse's breast. The other strap take up in your right hand, to prevent him from running ahead; then turn him about a few times in the stable, and if the door is wide enough, ride out with him in that position; if not, take the broke horse out first, and stand his breast up against the door, then lead the colt to the same spot, and take the straps as before directed, one on each side of his neck, then let some one start the colt out, and as he comes out, turn your horse to the left, and you will have them all right. This is the best way to lead a colt; you can

manage any kind of a colt in this way without any trouble, for, if he tries to run ahead, or pull back, the two straps will bring the horses facing each other, so that you can very easily follow up his movements without doing much holding, and as soon as he stops running backward, you are right with him, and ready to go ahead. And if he gets stubborn, and does not want to go, you can remove all his stubbornness by riding your horse against his neck, thus compelling him to turn to the right, and as soon as you have turned him about a few times, he will be willing to go along. The next thing, after you are through leading him, will be to take him into a stable, and hitch him in such a way as not to have him pull on the halter, and as they are often very troublesome to get into a stable the first few times, I will give you some instructions about getting him in.

HOW TO LEAD A COLT INTO THE STABLE AND HITCH HIM WITHOUT HAVING HIM PULL ON THE HALTER.

You should lead the broke horse into the stable first, and get the colt, if you can, to follow in after him. If he refuses to go, step up to him, taking a little stick or switch in your right hand; then take hold of the halter close to his head with your left hand, at the same time reaching over his back with your right arm, so that you can tap him on the opposite side with your switch; bring him up facing the door, tap him lightly with your switch, reaching as far back as you can. This tapping, by being pretty well back, and on the opposite side, will drive him ahead, and keep him close to you, then by giving him the right direction with your left hand you can walk into the stable with him.

I have walked colts into the stable this way, in less than a minute, after men had worked at them half an hour trying to pull them. If you cannot walk with him at once in this way, turn him about and walk him around in every direction, until you can get him up to the door without pulling at him. Then let him stand a few minutes, keeping his head in the right direction with the halter, and he will walk in, in less than ten minutes. Never attempt to pull the colt into the stable; that would make him think at once that it was a dangerous place, and if he was not afraid of it before, he would be then. Besides we don't want him to know anything about pulling on the halter. Colts are often hurt, and sometimes killed, by trying to force them into the stable; and those who attempt to do it in that way, go into an up-hill business, when a plain, smooth road is before them.

If you want to hitch your colt, put him in a tolerably wide stall, which should not be too long, and should be connected by a bar or something of that kind to the partition behind it; so that after the colt is in, he cannot get far enough back to take a straight backward pull on the halter; then by hitching him in the centre of the stall, it would be impossible for him to pull on the halter, the partition behind preventing him from going back, and the halter in the centre checking him every time he turns to the right or left. In a stall of this kind you can break every horse to stand hitched by a light strap, any where, without his knowing anything about pulling. But if you have broke your horse to lead, and have learned him to use the halter, (which you should always do before you hitch him to

anything,) you can hitch him in any kind of a stall and give him something to eat to keep him up to his place for a few minutes at first, and there is not one colt out of fifty that will pull on his halter.

THE KIND OF BIT, AND HOW TO ACCUSTOM A HORSE TO IT.

You should use a large, smooth, snaffle bit, so as not to hurt his mouth, with a bar on each side to prevent the bit from pulling through either way. This you should attach to the head-stall of your bridle and put it on your colt without any reins to it, and let him run loose in a large stable or shed some time, until he becomes a little used to the bit, and will bear it without trying to get it out of his mouth. It would be well, if convenient, to repeat this several times before you do anything more with the colt; as soon as he will bear the bit, attach a single rein to it, without any martingale. You should also have a halter on your colt, or a bridle made after the fashion of a halter, with a strap to it, so that you can hold or lead him about without pulling on the bit much. He is now ready for the saddle.

HOW TO SADDLE A COLT.

Any one man, who has this theory, can put a saddle on the wildest colt that ever grew, without any help, and without scaring him. The first thing will be to tie each stirrup strap into a loose knot to make them short, and prevent the stirrups from flying about and hitting him. Then double up the skirts and take the saddle under your right arm, so as not to frighten him with it as you approach. When you get to him, rub

him gently a few times with your hand, and then raise the saddle very slowly, until he can see it, and smell, and feel it with his nose. Then let the skirts loose, and rub it very gently against the neck the way the hair lays, letting him hear the rattle of the skirts as he feels them against him, each time getting a little farther backward, and finally slip it over his shoulders on his back. Shake it a little with your hand, and in less than five minutes you can rattle it over his back as much as you please, and pull it off and throw it on again, without his paying much attention to it.

As soon as you have accustomed him to the saddle, fasten the girth. Be careful how you do this. It often frightens the colt when he feels the girth binding him, and making the saddle fit tight on his back. You should bring up the girth very gently, and not draw it too tight at first, just enough to hold the saddle on. Move him a little, and then girth it as tight as you choose, and he will not mind it.

You should see that the pad of your saddle is all right before you put it on, and that there is nothing to make it hurt him, or feel unpleasant to his back. It should not have any loose straps on the back part of it, to flap about and scare him. After you have saddled him in this way, take a switch in your right hand, to tap him up with, and walk about in the stable a few times with your right arm over your saddle, taking hold of the reins on each side of his neck, with your right and left hands; thus marching him about in the stable until you learn him the use of the bridle, and can turn him about in any direction, and stop him by a gentle pull of the rein. Always caress him, and loose the reins a little every time you stop him.

You should always be alone, and have your colt in some tight stable or shed, the first time you ride him; the loft should be high, so that you can sit on his back without endangering your head. You can learn him more in two hours' time in a stable of this kind, than you could in two weeks in the common way of breaking colts, out in an open place. If you follow my course of treatment, you need not run any risk, or have any trouble in riding the worst kind of a horse. You must take him a step at a time, until you get up a mutual confidence and trust between yourself and horse. First learn to be lead and stand hitched; next, acquaint him with the saddle and the use of the bit, and then all that remains is to get on without scaring him, and you can ride him as well as any horse.

HOW TO MOUNT THE COLT.

First, gentle him well on both sides, about the saddle, and all over, until he will stand still without holding, and is not afraid to see you anywhere about him.

As soon as you have him thus gentled, get a small block, about one foot or eighteen inches in height, and set it down by the side of him, about where you want to stand to mount him; step up on this, raising yourself very gently; horses notice every change of position very closely, and, if you were to step suddenly on the block, it would be very apt to scare him; but, by raising yourself gradually on it, he will see you without being frightened, in a position very near the same as when you are on his back.

As soon as he will bear this without alarm, untie the stirrup-strap next to you, and put your left foot into the stirrup, and stand square over it, holding your knee

against the horse, and your toe out, so as not to touch him under the shoulder with the toe of your boot. Place your right hand on the front of the saddle, and on the opposite side of you, taking hold of a portion of the mane and reins, as they hang loosely over the neck, with your left hand; then gradually bear your weight on the stirrup, and on your right hand, until the horse feels your whole weight on the saddle. Repeat this several times, each time raising yourself a little higher from the block, until he will allow you to raise your leg over his croup and place yourself in the saddle.

There are three great advantages in having a block to mount from. First, a sudden change of position is very apt to frighten a young horse who has never been handled. He will allow you to walk up to him and stand by his side without scaring at you, because you have gentled him to that position, but if you get down on your hands and knees and crawl towards him, he will be very much frightened; and upon the same principle, he would frighten at your new position if you had the power to hold yourself over his back without touching him. Then, the first great advantage of the block is to gradually gentle him to that new position in which he will see you when you ride him.

Secondly, by the process of leaning your weight in the stirrups, and on your hand, you can gradually accustom him to your weight, so as not to frighten him by having him feel it all at once. And, in the third place, the block elevates you so that you will not have to make a spring in order to get on the horse's back, but from it you can gradually raise yourself into the

saddle. When you take these precautions, there is no horse so wild but you can mount him without making him jump. I have tried it on the worst horses that could be found, and have never failed in any case. When mounting, your horse should always stand without being held. A horse is never well broke when he has to be held with a tight rein when mounting; and a colt is never so safe to mount, as when you see that assurance of confidence and absence of fear which causes him to stand without holding.

HOW TO RIDE A COLT.

When you want him to start, do not touch him on the side with your heel, or do anything to frighten him and make him jump; but speak to him kindly, and if he does not start, pull him a little to the left until he starts, and then let him walk off slowly with the reins loose. Walk him around in the stable a few times until he gets used to the bit, and you can turn him about in every direction and stop him as you please. It would be well to get on and off a good many times, until he gets perfectly used to it, before you take him out of the stable.

After you have trained him in this way, which should not take more than one or two hours, you can ride him anywhere you choose without ever having him jump or make an effort to throw you.

When you first take him out of the stable, be very gentle with him, as he will feel a little more at liberty to jump or run, and be a little easier frightened than he was while in the stable. But after handling him so much in the stable, he will be pretty well broke, and

you will be able to manage him without trouble or danger.

When you first mount him, take a little the shortest hold of the left rein, so that if anything frightens him, you can prevent him from jumping by pulling his head around to you. This operation of pulling a horse's head around against his side, will prevent any horse from jumping ahead, rearing up, or running away. If he is stubborn and will not go, you can make him move by pulling his head around to one side, when whipping would have no effect. And turning around a few times will make him dizzy, and then by letting him have his head straight, and giving him a little touch with the whip, he will go along without any trouble.

Never use martingales on a colt when you first ride him; every movement of the hand should go right to the bit, in the direction in which it is applied to the reins, without a martingale to change the direction of the force applied. You can guide the colt much better without them, and learn him the use of the bit in much less time. Besides, martingales would prevent you from pulling his head around if he should try to jump.

After the colt has been rode until he is gentle and well accustomed to the bit, you may find it an advantage if he carries his head too high, or his nose too far out, to put martingales on him.

You should be careful not to ride your colt so far at first as to heat, worry or tire him. Get off as soon as you see he is a little fatigued; gentle him and let him rest; this will make him kind to you, and prevent him from getting stubborn or mad.

THE PROPER WAY TO BIT A COLT.

Farmers often put a bitting harness on a colt the first thing they do with him, buckling up the bitting as tight as they can draw it, to make him carry his head high, and then turn him out in a lot to run a half day at a time. This is one of the worst punishments that they could inflict on a colt, and very injurious to a young horse that has been used to running in pasture with his head down. I have seen colts so injured in this way that they never got over it.

A horse should be well accustomed to the bit before you put on the bitting harness, and when you first bit him you should only rein his head up that point where he naturally holds it, let that be high or low; he will soon learn that he cannot lower his head, and that raising it a little will loosen the bit in his mouth. This will give him the idea of raising his head to loosen the bit, and then you can draw the bitting a little tighter every time you put it on, and he will still raise his head to loosen it; by this means you will gradually get his head and neck in the position you want him to carry it, and give him a nice graceful carriage without hurting him, making him mad, or causing his mouth to get sore.

If you put the bitting on very tight the first time, he cannot raise his head enough to loosen it, but will bear on it all the time, and paw, sweat, and throw himself. Many horses have been killed by falling backward with the bitting on; their heads being drawn up, strike the ground with the whole weight of the body. Horses that have their heads drawn up tightly should not have the bitting on more than fifteen or twenty minutes at a time.

HOW TO DRIVE A HORSE THAT IS VERY WILD AND HAS ANY VICIOUS HABITS.

Take up one fore foot and bend his knee till his hoof is bottom upwards, and nearly touching his body, then slip a loop over his knee, and up until it comes above the pastern joint to keep it up, being careful to draw the loop together between the hoof and pastern joint with a second strap of some kind, to prevent the loop from slipping down and coming off. This will leave the horse standing on three legs; you can now handle him as you wish, for it is utterly impossible for him to kick in this position. There is something in this operation of taking up one foot that conquers a horse quicker and better than anything else you can do to him. There is no process in the world equal, to break a kicking horse, for several reasons. First, there is a principle of this kind in the nature of the horse, that by conquering one member you conquer, to a great extent, the whole horse.

You have, perhaps, seen men operate upon this principle by sewing a horse's ears together to prevent him from kicking. I once saw a plan given in a newspaper to make a bad horse stand to be shod, which was to fasten down one ear. There was no reason given why you should do so; but I tried it several times, and thought it had a good effect—though I would not recommend its use, especially stitching his ears together. The only benefit arising from this process is, that by disarranging his ears we draw his attention to them, and he is not so apt to resist the shoeing. By tying up one foot we operate on the same principle, to a much better effect. When you first fasten up a horse's

foot, he will sometimes get very mad, and strike with his knee, and try every possible way to get it down; but he cannot do that, and will soon give up.

This will conquer him better than anything you could do, and without any possible danger of hurting himself, or you either, for you can tie up his foot and sit down and look at him until he gets up. When you find that he is conquered, go to him, let down his foot, rub his leg with your hand, and let him rest a little, then put it up again. Repeat this a few times, always putting up the same foot, and he will soon learn to travel on three legs so that you can drive him some distance. As soon as he gets a little used to this way of travelling, put on your harness, and hitch him to a sulky. If he is the worst kicking horse that ever raised a foot you need not be fearful of his doing any damage while he has one foot up, for he cannot kick, neither can he run fast enough to do any harm. And if he is the wildest horse that ever had harness on, and has run away every time he has been hitched, you can now hitch him in a sulky and drive him as you please. And if he wants to run, you can let him have the lines, and whip too, with perfect safety, for he can go but a slow gait on three legs, and will soon be tired and willing to stop; only hold him enough to guide him in the right direction, and he will soon be tired, and willing to stop at the word. Thus you will effectually cure him at once of any further notion of running off. Kicking horses have always been the dread of everybody; you always hear men say, when they speak about a bad horse, "I don't care what he does, so he don't kick." This new method is an effective cure for this worst of

all habits. There are plenty of ways by which you can hitch a kicking horse, and force him to go, though he kicks all the time; but this don't have any good effect towards breaking him, for we know that horses kick because they are afraid of what is behind them, and when they kick against it and it hurts them, they will only kick the harder, and this will hurt them still more, and make them remember the scrape much longer, and make it still more difficult to persuade them to have any confidence in anything dragging behind them ever after.

By this new method you can hitch them to a rattling sulky, plow, wagon, or anything else in its worst shape. They may be frightened at first, but cannot kick, or do anything to hurt themselves, and will soon find that you do not intend to hurt them, and then they will not care anything more about it. You can then let down the leg, and drive along gently without any further trouble. By this new process a bad kicking horse can be learned to go gentle in harness in a few hours time.

ON BALKING.

Horses know nothing about balking, only as they are brought into it by improper management; and when a horse balks in harness, it is generally from some mismanagement, excitement, confusion, or from not knowing how to pull, but seldom from any unwillingness to perform all that he understands. High spirited, free-going horses, are the most subject to balking, and only so because drivers do not properly understand how to manage this kind. A free horse in a team may be so anxious to go, that when he hears the word he will

start with a jump, which will not move the load, but give him such a severe jerk on the shoulders, that he will fly back and stop the other horse; the teamster will continue his driving without any cessation, and by the time he has the slow horse started again, he will find the free horse has made another jump, and again flew back; and now he has them both badly balked, and so confused that neither of them knows what is the matter, or how to start the load. Next will come the slashing and crashing of the whip, and hallooing of the driver till something is broken, or he is through with his course of treatment. But what a mistake the driver commits by whipping his horse for this act! Reason and common sense should teach him that the horse was willing and anxious to go, but did not now now to start the load. And should he whip him for that? If so, he should whip him again for not knowing how to talk. A man that wants to act with any rationality or reason, should not fly into a passion, but should always think before he strikes. It takes a steady pressure against the collar to move a load, and you cannot expect him to act with a steady, determined purpose while you are whipping him. There is hardly one balking horse in five hundred that will pull true from whipping; it is only adding fuel to fire, and will make them more liable to balk another time. You always see horses that have been balked a few times, turn their heads and look back, as soon as they are a little frustrated. This is because they have been whipped, and are afraid of what is behind them. This is an invariable rule with balked horses, just as much as it is for

them to look around at their sides when they have the bots. In either case, they are deserving of the same sympathy, and the same kind, rational treatment.

When your horse balks, or is a little excited, if he wants to start quickly, or looks around, and don't want to go, there is something wrong, and he needs kind treatment immediately. Caress him kindly, and if he don't understand at once what you want him to do, he will not be so much excited as to jump and break things, and do every thing wrong through fear.—As long as you are calm, and can keep down the excitement of the horse, there are ten chances to have him understand you, where there would not be one under harsh treatment, and then the little *flare-up* would not carry with it any unfavorable recollections, and he would soon forget all about it, and learn to pull true. Almost every wrong act the horse commits, is from mismanagement, fear or excitment: one harsh word will so excite a nervous horse as to increase his pulse ten beats in a minute.*

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*REMARKS.—In the first place, never teach your horse to balk, by giving him a greater load than he can carry, or requiring him to go up too steep a hill without permitting him to stop. If you tell him to stop, in going up a steep hill, it is better than to allow him to do it of his own accord. If he finds he can stop of his own will, and start when he pleases, he will soon learn to do it when he ought not to. If at any time he stops without your stopping him, give him a sharp cut, and make him go on, even if you think he ought to stop at that very place; but soon yourself give him an opportunity to stop. This will teach him that he is to stop only at your will, and that you are not unreasonable in your demands. I believe that all balky horses are in the first instance taught to balk by their careless and inconsiderate owners, who overload them, and allow them to stop or go according to their own will. Once a horse finds he can stop at will without reproof, he will stop, perhaps, on a smooth road, or in the middle of a village, or on the street of a city, where you will be mortified as well as discommoded.

When we remember that we are dealing with dumb brutes, and reflect how difficult it must be for them to understand our motions, signs and language, we should never get out of patience with them, because they don't understand us, or wonder at their doing things wrong. With all our intellect, if we were placed in the horse's situation, it would be difficult for us to understand the driving of some foreigner, of foreign ways and foreign language. We should always recollect that our ways and language are unknown to the horse, and should try to practice what we could understand, were we the horse, endeavoring by some simple means to work on his understanding rather than on the different parts of his body. All balked horses can be started true and steady in a few minutes' time: they are willing to pull as soon as they know how, and I never yet found a balked horse that I could not teach to start his load in fifteen, and often less than three minutes' time.

Almost any team, when first balked, will start kind-

Before resorting to severe means the cause should be ascertained. The horse may be overtaxed, his withers may be wrung, or he may be insupportably galled or pained by the harness. These things should be examined into, and, if possible, rectified; for, under such circumstances, cruelty may produce obstinacy and vice, but not willing obedience. A horse whose shoulders are raw, or have frequently been so, will not start with a cold collar. When the collar has acquired the warmth of the parts on which it presses, the animal will go without reluctance. Some determined balkers have been reformed by constantly wearing a false collar, or strip of cloth round the shoulders, so that the coldness of the usual collar should never be felt; and others have been cured of balking by keeping the collar on night and day, for the animal is not able to lie down completely at full length, which the tired horse is always glad to do. When a horse balks, not at starting, but while doing his work, it has sometimes been useful to line the collar with cloth instead of leather; the perspiration is readily absorbed, the substance which presses on the shoulder is softer, and it may be far more accurately eased off at a tender place.

ly, if you let them stand five or ten minutes, as though there was nothing wrong, and then speak to them with a steady voice, and turn them a little to the right or left, so as to get them both in motion before they feel the pinch of the load. But if you want to start a team that you are not driving yourself, that has been balked, fooled, and whipped for some time, go to them and hang the lines on their hames, or fasten them to the wagon, so that they will be perfectly loose: make the driver and spectators, (if there are any,) stand off some distance to one side, so as not to attract the attention of the horses; loosen their check-reins, so that they can get their heads down, if they choose; let them stand a few minutes in this condition, until you see that they are a little composed. While they are standing, you should be about their heads, gentling them: it will make them a little more kind. When you are ready to start, stand before them, and as you seldom have but one balky horse in a team, get as near in front of him as you can, and if he is too fast for

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But what shall we do with a horse who has thoroughly learned to balk, and whom whipping only hardens? Desperate remedies should sometimes be used for desperate cases, and you may in such cases either kill your horse as not being worthy the oats you give him, or you may fasten him to a strong carriage, put on a strong harness and reins, and if he balks, set fire to a bunch of shavings or a newspaper at his heels, or a bunch of fire crackers; or exciting his spirits by the application of spirits of turpentine under his tail; he is bound to go in such case—perhaps too fast for you—but of this you must run your risk. It is a desperate remedy, but when kindness and good treatment do not succeed, such a remedy will succeed better, and is more humane than beating, unmerciful whipping, &c., which seldom succeed at all.

In India when a horse can and will not draw, instead of whipping, spurring or *burning* him, they quietly get a rope and attaching it to one of the fore feet, one or two men take hold of it, and advancing a few paces ahead of the horse, pull their best. No matter how stubborn the animal may be, a few doses of such treatment effects a perfect cure.

the other horse let his nose come against your breast: this will keep him steady, for he will go slow rather than run on you; turn them gently to the right, without letting them pull on the traces, as far as the tongue will let them go; stop them with a kind word, gentle them a little, and then turn them back to the left, by the same process. You will have them under your control by this time, and as you turn them again to the right, steady them in the collar, and you can take them where you please.

There is a quicker process that will start a balky horse, but not so sure. Stand him a little ahead, so that his shoulders will be against the collar, and then take up one of his fore feet in your hand, and let the driver start them, and when the weight comes against his shoulders, he will try to step: then let him have his foot, and he will go right along. If you want to break a horse from balking, that has long been in that habit, you ought to set apart a half a day for that purpose.—Put him by the side of some steady horse; have check-lines on them; tie up all the traces and straps, so that there will be nothing to excite them; do not rein them up, but let them have their heads loose. Walk them about together for some time as slowly and lazily as possible; stop often and go to your balky horse and gentle him. Do not take any whip about him, but keep him just as quiet as you can. He will soon learn to start off at the word, and stop whenever you tell him.

As soon as he performs right, hitch him in an empty wagon; have it stand in a favorable position for starting. It would be well to shorten the stay-chain be-

hind the steady horse, so that, if it is necessary, he can take the weight of the wagon the first time you start them. Do not drive but a few rods at first: watch your balky horse closely, and if you see that he is getting excited, stop him before he stops with his own accord; caress him a little, and start again. As soon as they go well, drive them over a small hill a few times, and then over a large one, occasionally adding a little load. This process will make any horse true to pull.

TO BREAK A HORSE TO HARNESS.

Take him in a tight stable, as you did to ride him; take the harness and go through the same process that you did with the saddle, until you get him familiar with them, so that you can put them on and rattle them about without his caring for them. As soon as he will bear this, put on the lines, caress him as you draw them over him, and drive him about in the stable till he will bear them over his hips. The *lines* are a great aggravation to some colts, and often frighten them as much as if you were to raise a whip over them. As soon as he is familiar with the harness and lines, take him out and put him by the side of a gentle horse, and go through the same process that you did with the balking horse. Always use a bridle without blinds, when you are breaking a horse to harness.

HOW TO HITCH A HORSE IN A SULKY.

Lead him to and around it; let him look at it, touch it with his nose, and stand by it till he does not care for it; then pull the shafts a little to the left, and stand your horse in front of the off wheel. Let some one

stand on the right side of the horse, and hold him by the bit, while you stand on the left side, facing the sulky. This will keep him straight. Run your left hand back, and let it rest on his hip, and lay hold of the shafts with your right, bringing them up very gently to the left hand, which still remains stationary. Do not let anything but your arm touch his back, and as soon as you have the shafts square over him, let the person on the opposite side take hold of one of them, and lower them very gently to the shaft-bearers. Be very slow and deliberate about hitching; the longer time you take, the better, as a general thing. When you have the shafts placed, shake them slightly, so that he will feel them against each side. As soon as he will bear them without scaring, fasten your braces, etc., and start him along very slowly. Let one man lead the horse, to keep him gentle, while the other gradually works back with the lines till he can get behind and drive him. After you have driven him in this way a short distance, you can get into the sulky and all will go right. It is very important to have your horse go gently, when you first hitch him. After you have walked him awhile, there is not half so much danger of his scaring. Men do very wrong to jump behind a horse to drive him as soon as they have him hitched. There are too many things for him to comprehend all at once. The shafts, the lines, the harness and the rattling of the sulky, all tend to scare him, and he must be made familiar with them by degrees. If your horse is very wild, I would advise you to put up one foot the first time you drive him.

HOW TO TEACH A HORSE TO FOLLOW YOU.

Place him in a large barn with a bridle on, gentle him a little. Take hold of the bridle, turn him towards you, at the same time touch him lightly with a long whip over the shoulders. Lead him the length of the barn, cares ing him, at the same time come along—calling him by name in a gentle tone of voice. Each time he turns, touch him with the whip to keep him up close to you. He will soon learn to keep close to you to escape the whip and to be caressed, and he will follow without taking hold of the bridle. If he should stop, give him a sharp cut about the hind legs; he will soon turn towards you, when he should be caressed. After a few lessons of this kind, he will run after you when he sees the motion of the whip. He may then be taken into a yard, and then in the road or anywhere else.

HOW TO TEACH A HORSE TO STAND WITHOUT HOLDING.

After he has learned to follow you, place him in the centre of the stable, begin at his neck to caress him, gradually working backwards, until you can get around him without making him move, then gradually enlarge your circle. If he moves, give him a sharp cut with a whip, and place him back in his place. If he stands, approach him occasionally and caress him. Make him come to you occasionally and follow you; not keeping him in one position too long—half an hour is long enough to train a horse at a time.

HOW TO TEACH A HORSE TO PACE AND INCREASE HIS STRIDE.

If you wish to learn your horse to pace, buckle a six pound weight around each ankle of his hind legs; ride him briskly with these weights attached, at the same time alternately twitch each rein of the bridle; this will throw him into a pace; repeat the lessons every day for a short time, and then decrease the weights gradually for twelve days, when they may be entirely removed. If you desire to increase the stride of either a trotting or pacing horse, buckle a strap around the arm of each fore-leg.

HOW TO TEACH A HORSE TO MAKE A BOW.

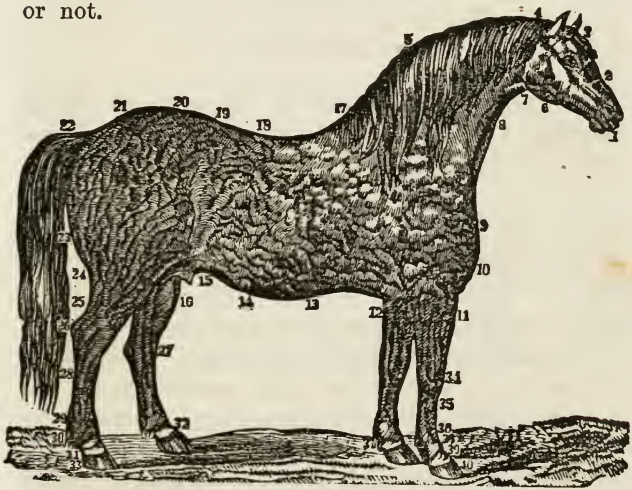
Take the horse by the bits, and take hold of the top of his head, pinch it as you draw it down; in a short time you can draw it down by pulling his main, using some word that he will get familiar with; after a little practice he will make a bow by pulling his mane or using the familiar word. This is the way showmen train horses to use in the ring. By patience and perseverance you can learn a horse as many pranks as Dan Rice learns his.

BREAKING COLTS.

As thi ssubject is one of vital importance, we veture a few remarks in addition to Mr Rarey's method. The breaking of colts may commence at an early age As tney aavance towards maturity they become more fixed in their habits, are more resolute in their temper, less able to be taught, and are able to offer greater resistance, and there is less danger of their injuring themselves or their trainer, by their efforts to free themselves from restraint. The training of a colt may commence before they are a month old, by handling, caressing, currying, and making a pet of them, taking care to touch them only in such places as are agreeable to them, such as the back, jowls, and the under side of the neck, taking care to avoid the ears. A halter may be put on when three months old, one that will be impossible for them to break. Fasten it to the collar of the mare, and teach them to follow the mare thus early, being careful that they do not hang back on the halter. The habit once confirmed, it will be difficult to break them of it. Let perfect kindness characterise all your first efforts—reward every act of obedience, and bring them under perfect subjection.

Of all the vicious habits which are found in horses, we believe nine-tenths are owing to unkind treatment, harsh usage, and improper management.

A colt may be broken to do very light work in harness at two years old, but should not be backed, except by a small boy, until three, and a light man until four years old. When he becomes accustomed to the reins, a person may take hold of the traces and occasionally pull on them, teaching the colt to keep steadily along, whether he feels any draught on his shoulders or not.



EXTERNAL PARTS OF THE HORSE.

1, Muzzle.
2, Face.
3, Forehead.
4, Poll.
5, Crest.
6, Jowl.
7, Gullet.
8, Windpipe.
9, Point of Shoulder.
10, Breast or Bosom.
11, Arm.
12, Elbow.
13, Girth.
14, Flank.
15, Sheath.
16, Stifles.
17, Withers.
18, Back.
19, Loins.
20, Hip.
21, Croup.
22, Dock.
23, Quarter.
24, Thigh or Gaskin.
25, Hamstring.
26, Joint of Hock.
27, Ham or Hock.
28, Common.
29, Fetlock.
30, Large Pastern.
31, Small Pastern.
32, Coronet.
33, Hoof.
34, Knee.
35, Common.
36, Fetlock.
37, Heel.
38, Large.
39, Small Pastern
40, Hoof Pastern.

CHAPTER IV.

GENERAL MANAGEMENT, ETC., OF THE HORSE.

STABLING.

This matter has not received the attention that its importance demands. A situation should be selected which will admit of draining, sheltered from the coldest winds, and easy of access. In damp, unventilated stables, you will be the most likely to find such diseases as mange, coughs, bad eyes, greasy heels, swelled-legs, glanders, farcy, and rough, dry, staring coat.—Stables should be about sixteen to eighteen feet in width, and have six feet for each stall. It is well to have a door at each end when convenient, for the purpose of ventilation, when necessary. It should be about eight by five feet. Accidents often occur from having it too narrow; it may be double. It should be so hung as to swing back of its own accord. The edges of the posts should be rounded; the ceiling should be at least nine feet in height.

The stable should be so contrived that the urine shall quickly run off, and the offensive and injurious vapor from decomposing fluid and the litter will thus

be materially lessened; but if this is effected by means of gutters and a descending floor, the descent must be barely sufficient to cause the fluid to escape, as, if the toes are kept higher than the heels, it will lead to lameness, and is also a frequent cause of contraction of the foot. Stalls of this kind certainly do best for mares; but for horses we much prefer those with a grating in the centre, and a slight inclination of the floor on every side towards the middle. A short branch may communicate with a larger drain, by means of which the urine may be carried off to a reservoir outside the stable. Traps are now contrived, and may be procured at little expense, by means of which neither any offensive smell nor current of air can pass through the grating.

AIR AND LITTER.

The breathing of pure air is necessary to the existence and the health of man and beast. It is comparatively lately that this has been admitted even in the management of our best stables.

If the stable is close, the air will not only be hot, but foul. The breathing of every animal contaminates it; and when, in the course of the night, with every aperture stopped, it passes again and again through the lungs, the blood cannot undergo its proper and healthy change; digestion will not be so perfectly performed, and all the functions of life are injured.

Every stable should possess within itself a certain degree of ventilation. The cost of this would be trifling, and its saving in the preservation of valuable animals will be immense. The appertures need not

be large, and the whole may be so contrived that no direct current of air will fall on the horse.

The temperature of a stable should seldom exceed 70° in the summer or sink below 40° or 50° in the winter.

Litter should be frequently removed. The early extrication of gas shows the rapid putrefaction of the urine; and the consequence of which will be the rapid putrefaction of the litter that has been moistened by it. Everything hastening to decomposition should be carefully removed where life and health are to be preserved. The litter that has been much wetted or at all softened by the urine, and is beginning to decay, should be swept away every morning; the greater part of the remainder may then be piled away under the manger; a little being left to prevent the painful and injurious pressure of the feet on the hard pavement during the day. The soiled and soaked portion of that which was left should be removed at night. In the better kind of stables, however, the stalls should be completely emptied every morning.

No heap of fermenting dung should be suffered to remain during the day in the corner or in any part of the stable.

GROOMING.

Of this, much need not be said to the agriculturist, since custom, and apparently without ill effect, has allotted so little of the comb and brush to the farmer's horse. The animal that is worked all day, and turned out at night, requires little more to be done to him than to have the dirt brushed off his limbs. Regular grooming, by rendering his skin more sensible to the

alternation of temperature, and the inclemency of the weather, would be prejudicial. The horse that is altogether turned out, needs no grooming. The dandruff, or scurf, which accumulates at the roots of the hair, is a provision of nature to defend him from the wind and the cold.

The stable horse, however, should be dressed regularly every day, in addition to the grooming that is necessary after work.

Whoever would be convinced of the benefit of friction to the horse's skin, and to the horse generally, needs only to observe the effects produced by well hand-rubbing the legs of a tired horse. While every enlargement subsides, and the painful stiffness disappears, and the legs attain their natural warmth, and become fine, the animal is evidently and rapidly reviving; he attacks his food with appetite, and then quietly lies down to rest.

When, however, the horse is changing his coat, both the curry-comb and the brush should be used as lightly as possible.

Boiled barley, boiled or raw linseed, raw carrots, and boiled turnips, are among the articles of food that lay the hair, and soften the skin.

Grooming should be conducted out of the stable, whenever practicable. Mud should never be allowed to dry on the legs or feet. They should be got cool, dry and clean, by washing, scraping, rubbing and walking a heated horse; and they should never be left in a cold draft, when warm. Cleanliness is indispensable to the health of a horse.

DRESSING VICIOUS HORSES.

Many horses are rendered vicious to clean, by the awkwardness, timidity, and folly of the keeper. An awkward man gives the horse more pain than ought to attend the operation. A timid man allows the horse to master him, and a mischievous fellow is always learning him tricks.

Biting may be prevented by putting on a muzzle, or by tying the head to the rack, or to the ring outside of the stable. When reversed in the stall, the head may be secured by the pillar-reins. A muzzle often deters a horse from attempting to bite, but some will strike a man to the ground, though they cannot seize him. These must be tied up. Many harness-horses are perfectly quiet while they are bridled, and it is sufficient to let the bridle remain on, or to put it on, till they be dressed. Others, again, are quite safe when blindfolded. Kicking horses are more dangerous than biters. A great many strike out, and are apt to injure an awkward groom; yet they are not so bad but an expert fellow may manage them, without using any restraint. A switch held always in the hand, in view of the horse, and lightly applied, or threatened when he attempts to strike, will render others comparatively docile. A few permit their hind quarters to be cleaned while their clothes are on. Some there are, however, that cannot be managed so easily. They strike out; those especially that lead idle lives, so quickly and so maliciously, that the groom is in great danger, and cannot get his work properly performed. There are two remedies—the arm-strap and the twitch.* Where

* See page 78.

another man cannot be spared to assist, one of the fore legs is tied up; the knee is bent till the foot almost touches the elbow, and a broad buckling-strap is applied over the fore-arm and the pastern. The horse then stands upon three legs, and the groom is in no danger of a kick. Until the horse is accustomed to stand in this way, he is apt to throw himself down; For the first two or three times, the leg should be held up by a man, rather than tied with a strap. The horse should stand on a thick bed of litter, so that he may not be injured, should he fall. In course of time, he may perhaps become quieter, and the arm-strap may be thrown aside. It should not be applied always to the same leg, for it produces a tendency to knuckling over of the pastern, which, in a great measure, is avoided by tying up each leg alternately. Even the arm-strap will not prevent some horses from kicking. Some can stand on two legs, and some will throw themselves down. The man must just coax the horse, and get over the operation with as little irritation as possible. Upon extraordinary occasions, the twitch may be employed, but it must not be applied every day, otherwise the lip upon which it is placed becomes inflamed or palsied. When restraint must be resorted to, the man should be doubly active in getting through his work, that the horse may not be kept for a needless length of time in pain. He may, in some cases, give the horse a very complete dressing when he is fatigued, and not disposed to offer much resistance.

EXERCISE.

Our observations on this important branch of stable-management must have only a slight reference to

the agricultural horse. His work is usually regular, and not exhausting. He is neither predisposed to disease by idleness, nor worn out by excessive exertion. He, like his master, has enough to do to keep him in health, and not enough to distress or injure him: on the contrary, the regularity of his work prolongs life to an extent rarely witnessed in the stable. Our remarks on exercise, then, must have a general bearing. The first rule we would lay down is, that every horse should have daily exercise. The animal that, with the usual stable-feeding, stands idle for three or four days, as is the case in many establishments, must suffer. He is predisposed to fever, or to grease, or most of all, diseases of the foot; and if, after three or four days of inactivity, he is ridden far and fast, he is almost sure to have inflammation of the lungs or of the feet.

A stable-fed horse should have two hours' exercise every day, if he is to be kept free from disease. Nothing of extraordinary, or even of ordinary labor, can be effected on the road or in the field, without sufficient and regular exercise. It is this alone which can give energy to the system, or develope the powers of any animal.

Exercise should be somewhat proportioned to the age of the horse. A young horse requires more than an old one. Nature has given to young animals of every kind a disposition to activity; but the exercise must not be violent. A great deal depends upon the manner in which it is given. To preserve the temper, and to promote health, it should be moderate, at least at the beginning and the termination. The rapid trot, or even the gallop, may be resorted to in the middle of the exercise, but the horse should be brought in cool.

FOOD.

The system of manger-feeding is becoming general among farmers. There are few horses that do not habitually waste a portion of their hay; and by some the greater part is pulled down and trampled under foot, in order first to cull the sweetest and best locks, and which could not be done while the hay was enclosed in the rack. A good feeder will afterwards pick up much of that which was thrown down; but some of it must be soiled and rendered disgusting, and, in many cases, one-third of this division of their food is wasted. Some of the oats and feed are imperfectly chewed by all horses, and scarcely at all by hungry and greedy ones. The appearance of the dung will sufficiently evince this.

The observation of this induced the adoption of manger-feeding, or of mixing a portion of cut feed with the grain. By this means the animal is compelled to chew his food. He cannot, to any great degree, waste the straw or hay; the feed is too hard and too sharp to be swallowed without sufficient mastication, and, while he is forced to grind that down, the oats are ground with it, and yield more nourishment; the stomach is more slowly filled, and therefore acts better on its contents, and is not so likely to be overloaded; and the increased quantity of saliva thrown out in the lengthened maceration of the food, softens it, and makes it more fit for digestion.

Many farmers very properly grind the oats or corn. The whole oat is apt to slip out of the feed and be lost; but when it is bruised, and especially if the feed is a little wetted, it will not readily separate; or, should a

portion of it escape the grinders, it will be partly prepared for digestion by the act of bruising. Horses of quicker draught, except they are naturally disposed to scour, will thrive better with bruised than with whole oats; for a greater quantity of nutriment will be extracted from the food.

For the agricultural and cart-horse, eight pounds of oats should be added to every twenty pounds of cut feed. Thirty-four or thirty-six pounds of the mixture will be sufficient for any moderate-sized horse, with fair, or even hard work. The dray and wagon-horse may require forty pounds. Hay in the rack at night is, in this case, supposed to be omitted altogether. The rack, however, may remain, as occasionally useful for the sick horse, or to contain tares or other green feed.

Horses are very fond of this provender. The majority of them, after having been accustomed to it, will leave the best oats given to them alone, for the sake of the mingled cut feed and grain. We would, however, caution the farmer not to set apart too much damaged hay for the manufacture of the feed. The horse may thus be induced to eat that which he would otherwise refuse; but if the nourishing property of the hay has been impaired, or it has acquired an injurious principle, the animal will either lose condition, or become diseased. For old horses, and for those with defective teeth, cut feed is peculiarly useful, and for them should be broken down as well as the fodder.

While the mixture of chaff with the grain prevents it from being too rapidly devoured, and a portion of it swallowed whole, and therefore the stomach is not

too loaded with that on which, as containing the most nutriment, its chief digestive power should be exerted, yet, on the whole, a great deal of time is gained by this mode of feeding, and more is left for rest. When a horse comes in wearied at the close of the day, it occupies, after he has eaten his grain, two or three hours to clear his rack. On the system of manger-feeding, the feed being already cut into small pieces, and the corn and oats ground, he is able fully to satisfy his appetite in an hour and a half. Two additional hours are therefore devoted to rest. This is a circumstance deserving of much consideration, even in the farmer's stable, and of immense consequence to stage-coach proprietors, and the owner of every hard-worked horse.

Manger-food will be the usual support of the farmer's horse during the winter, and while at constant or occasional hard work; but from the middle of April to the end of July, he may be fed with this mixture in the day, and turned out at night, or he may remain out during every rest day. A team in constant employ should not, however, be suffered to be out at night after the end of July.

The farmer should take care that the pasture is thick and good.

Every barn should be supplied with a feed-cutter, and it should be kept in daily use; and experience has proved that eight ears of corn crushed, is better feed, and will keep a horse in a better condition than twelve fed to him without crushing. Thirty or forty per cent. is saved by grinding the grain and mixing it with cut feed. They should be fed at regular intervals, their diet often changed, and no more given at a time than they will eat.

CARROTS.—The virtues of this root are not sufficiently known, whether as contributing to the strength and endurance of the sound horse, or the rapid recovery of the sick one. To the healthy horse, they should be given sliced in his feed. Half a bushel will be a fair daily allowance. There is little provender of which the horse is fonder. The following account of the value of the carrot is not exaggerated. "This root is held in much esteem. There is none better, nor perhaps so good. When first given, it is slightly diuretic and laxative; but as the horse becomes accustomed to it, these effects cease to be produced. They also improve the state of the skin. They form a good substitute for grass, and an excellent alterative for horses out of condition. To sick and idle horses, they render grain unnecessary. They are beneficial in all chronic diseases connected with breathing, and have a marked influence upon chronic cough and broken wind. They are serviceable in diseases of the skin, and in combination with oats they restore a worn horse much sooner than oats alone.

POTATOES have been given, and with advantage, in their raw state, sliced with the chaff; but, where it has been convenient to boil or steam them, the benefit has been far more evident. Purging has then rarely ensued. Some have given boiled potatoes, alone, and horses, instead of rejecting them, have soon preferred them even to oats; but it is better to mix them with the usual manger-feed, in the proportion of one pound of potatoes to two and a half pounds of the other ingredients. The use of the potatoe must depend on its cheapness, and the facility for boiling it. Half a dozen horses would soon repay the expense of a steaming-

boiler, in the saving of provender, without taking into the account their improved condition and capability for work. A horse fed on potatoes should have his quantity of water materially curtailed.

Prof. Low says that fifteen pounds of potatoes yield as much nourishment as four pounds and a half of oats. Von Thayer asserts that three bushels are equal to 112 pounds of hay; and Curwen, who tried potatoes extensively in the feeding of horses, says that an acre goes as far as four acres of hay.

WATER.—This is a part of stable management little regarded by the farmer. He lets his horses loose morning and night, and they go to the nearest pond or brook, and drink their fill, and no harm results, for they obtain that kind of water which nature designed them to have, in a manner prepared for them by some unknown influence of the atmosphere, as well as by the deposition of many saline admixtures. The difference between *hard* and *soft* water is known to every one. In soft water, soap will curdle, vegetables will not boil soft, and the saccharine matter of the malt cannot be fully obtained in the process of brewing. There is nothing in which the different effect of hard and soft water is so evident as in the stomach and digestive organs of the horse. Hard water, drawn fresh from the well, will assuredly make the coat of a horse unaccustomed to it stare, and it will not unfrequently gripe and otherwise injure him. Instinct or experience has made even the horse himself conscious of this, for he will never drink hard water if he has access to soft; and he will leave the most transparent and pure water of the well for a river, although the stream may be

turbid, and even for the muddiest pool. He is injured, however, not so much by the hardness of the well-water, as by its coldness—particularly by its coldness in summer, and when it is in many degrees below the temperature of the atmosphere. The water in the brook and the pond being warmed by long exposure to the air, as well as having become soft, the horse drinks freely of it without danger.

If the horse were watered three times a day, and especially in summer, he would often be saved from the sad torture of thirst, and from many a disease.

AGE.

To be able to ascertain the age of a horse, with tolerable certainty, is a subject of considerable importance to every person who may have occasion to purchase.

The following rules will enable any man to ascertain with tolerable certainty the age of any horse. Every horse has six teeth above and below: before he arrives at the age of three, he sheds his two middle teeth, by the young teeth rising and shoving the old ones out of their place. When he arrives at the age of three, he sheds one more on each side of the middle teeth; when four years old, he sheds two corner and the last of his fore teeth; between four and five, he cuts his under tusks, and when five, will cut his upper tusks, and have a mouth full and complete; his teeth appearing to have their full growth, except the tusks, and will be even, regularly placed, and pretty much grooved on the inside, with hollows of a very dark brown color. There is also a very plain difference between colt's and horse's teeth; the colt's being without grooves and hollows, and never so large and strong. Some horses are with-

out upper tusks, even to the end of their lives; but this is not common. The appearance of the lower tusks, and them fully grown, is the most certain proof that the horse is five years old, even if one of his colt's teeth remains unshed. At six years old, the grooves and hollows in a horse's mouth begin to fill up a little, and their tusks have their full growth, with their points sharp, and a little concave, or hollow on the inside. At seven years old, the grooves and hollows will be pretty well filled below, except the corner teeth, leaving, where the dark brown hollows formerly were, little brown spots. At eight, the whole of the hollows and grooves are filled up, and you see the appearance of what is termed *smooth below.* At nine years old there very often appears a small bill to the outside corner teeth; the point of the tusk is worn off, and the part that was concave begins to fill up and become rounding; the squares of the middle teeth begin to disappear, and the gums leave them small and narrow at the top. Dealers in horses sometimes drill or hollow the teeth with a graver, and black the hollows by using a hot iron, for the purpose of passing an old horse for a young one, upon those who have but little or no experience upon the subject. But a discerning eye will readily discover the cheat, by the unnatural shape and blackness of the hollows, the dullness and roundness of the tusks, together with the want of squares to the front, and by many other visible marks, which denote the advanced age of a horse.

Between nine and ten years of age, a horse generally loses the marks of the mouth, though there are a few exceptions; as some horses retain good mouths un-

til they are fourteen or fifteen years old, with their teeth white, even, and regular, and many other marks of freshness and vigor. But when a horse grows old, it may be discovered by these indications, which commonly attend old age, viz: The gums wear away and leave the roots of the teeth long and slender; the roots grow yellow, and often brownish; the bars of the mouth (which are always fleshy, plump, and dry, in a young horse, and form so many distinct, firm ridges,) in an old horse are lean, smooth, and are covered with saliva, with few or no ridges. The eyes of a young horse appear plump, full, and lively; the lids with few wrinkles, the hollows above the ball small, and no gray hairs upon the brow, unless they proceed from the color or marks of the horse. The eyes of an old horse appear sleepy, dim and sunk, and the lids loose and very much shriveled, with large hollows, and the brow gray. The countenance of a young horse is bold, gay, and lively; while that of an old one is sad, dejected, and melancholy, unless mounted, and artificial means used to give him spirit.

The age can be ascertained by a wrinkle over the eye after they are nine years old. A wrinkle comes on the eyelid at the upper corner of the lower lid, and every year thereafter he has one well-defined wrinkle for each year over nine. If, for instance, a horse has three wrinkles, he is twelve; if four, he is thirteen. And add the number of wrinkles to nine, and you will always get it.

TO SAVE HORSES FROM FIRE.

The difficulty of getting horses from burning stables is well known. The remedy is to blind-fold them perfectly, and by gentle usage, they may easily be led out.

METHOD OF ADMINISTERING MEDICINES.

We know of no improvement to the common custom of administering medicine in the form of a drench, using a common champagne bottle, and stand a little elevated on the right side of the horse, your back turned towards his body; 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 introduce the bottle between the canine teeth and grinders, keep it in that position, and gradually pour down the contents of the bottle. Time should be taken. If it is poured down in small quantities, 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. Medicine given in the fluid form is readily taken up by the lacteals, and operates, for good or evil, in much less time than balls. 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.

SCALDED SHORTS.

Shorts, as they are familiarly termed, when scalded make an excellent diet for sick animals. The usual method of preparation is, to turn two or three quarts of shorts into a bucket, to which add boiling water, so that the mixture, when stirred, shall be about the consistence of a soft poultice; it is then to be covered with a cloth, and not given to the horse until sufficiently cool. When a horse has taken cold, and labors under a discharge from the nostrils, the *mash* may be put into the manger while hot, with a view of steaming the nasal passages, and fa-

voring the discharge of morbid accumulations. This is good for all acute diseases; in fever and all inflammatory complaints; it is useful also as a preparative to physic, serving to remove any indurated fæces there may be in the bowels, whereby the operation of the medicine is rendered more safe and affectual. When a horse has been fed high for some time, a change to a diet of mashes for two or three days will often do a great deal of good.

During the active stage of acute diseases of the alimentary canal—inflammation of the bowels for example—food of this description is inadmissible, and such articles as are mucilaginous, or lubricating, are used. The best we know of, are flaxseed, marshmallows, and slippery elm. It is customary in England, in large stables, to *set a boiler*, in which hot water is continually kept for the purposes of the stable, and more particularly for making *bran mashes*, and at night, if any of the horses look *dumpish*, (fatigued,) a bran mash and a good warm bed of straw generally restore them.

JUDGING THE CHARACTER OF HORSES BY THEIR COLOR.

The following conclusions are the result of long experience and observation:

Sorrel or chestnut with white feet and head are marks of kindness, if broad and full between the eyes, can be depended on as a horse of good sense, and capable of being trained to anything; they will not stand the whip, if well fed.

A dish-faced horse indicates too much go-head, and is not safe for every body.

A deep bay, without a white hair, indicates one of great bottom, but rather tricky and unsafe, or what some would

call a fool of a horse. If you want one that will never give out, never try a large, overgrown horse.

A black horse cannot stand heat, nor a white one cold. White about the head—the more the better—indicates docility. Some suppose the parti-colored horses belonging to circuses, shows, &c., were selected for their oddity, but the selection is made on account of their great docility and gentleness.

WARRANTEES.

A few remarks on this subject may be serviceable often to the farmers, and we cannot do the subject better justice than to insert the following, taken from the Modern Horse-Doctor, by Dr. Dadd :

"Warrantees, by which is meant an idemnity against any unsoundness, or a pledge given—commonly in *writing*—by the vender to the purchaser, that the horse is sound and quiet, and possesses such and such qualifications. Without such idemnification or pledge, the law says, *Caveat emptor*—let the purchaser take the consequences; the rule at law being, that every body who purchases a horse takes him at his own judgment, and has no remedy against the seller, supposing the horse to turn out, upon a future trial, or a more considerate inspection after the purchase, to be worth less than the sum given; unless he (the purchaser,) can *prove* he was induced to purchase by representations false within the knowledge of the seller; to fasten a fraud of which nature upon an experienced dealer in horses is, however, a difficult matter. Warrantees are of different kinds—*expressed or implied*, *general* or *special*. An express warranty speaks for itself. And as for an implied warranty, such a thing is hardly known, or at least, rarely taken advantage of in *horse dealing*, the price paid, however high, not being legally held to be any guaranty of the soundness of the animal; and any thing that might transpire between seller and buyer, *implying* warranty, being worth nothing

without *proof*, which, heing procured, would render the transaction, in law, tantamount to an *express* warranty. A general warranty extends to *all* defects and faults known and unknown to the seller; but a special warranty is confined in its operation to the parts or particulars specifically pointed out. A horse may be warranted of such an age; or, having some defect visible upon his limbs, such as a spavin, or a curb, or a fired leg, of which he does not go lame at the time, that defect may be specified, and the horse warranted not (within any reasonable or prescribed period) to become lame in consequence of it. A general warranty, however, affords no protection against such defects as are 'plain and obvious' to every body, and, consequently, to the purchaser; no more than a special warranty does against any which are not included or named in the specification. 'But if, on the sale of a horse, the seller agree to deliver it sound and free from blemish *at the expiration of a specified period*, the warranty is broken by a fault in the horse when delivered, *although such defect was obvious at the time of sale;* and as some splints cause lameness and others do not, a splint is not one of those plain defects against which a warranty will not idemnify; and when a seller warrants a horse sound *at the time of sale*, and the horse afterwards becomes lame from the effects of a splint, visible when the horse was bought, it is certain that warranty is broken.' This rule will apply to spavin, or to curb, or to windgall, or, in fact, to any other defect 'visible at the time of sale.' For all warrantees can only undertake for the animal's qualifications *at the time of sale;* none can extend to any subsequent period unless there be a special clause 'to *deliver* the horse free from blemish,' and that delivery be by mutual agreement delayed.

"The form in which a receipt including warranty is generally written:—

"'Received, the 1st of January, 1858, of J. P., the sum of two hundred dollars for a bay mare, warranted sound and quiet to ride and drive.'

"Or, 'Warranted free from vice and blemish, except—,'

"Or, 'Warranted in every respect, except————.'

"Or, 'Warranted to have been constantly driven both in single and double harness, to have carried a lady, to have been regularly hunted, to be a good hunter or hackney, &c., &c.'

"Following the word 'except' there being opportunity afforded the (honest) vender of stating what he may know invalidating the warranty, and thereby saving his reputation as well as screening himself from the probability of litigation afterwards.

"'With respect to what (oral) declarations of the seller will amount to a warranty, the primary rule for the interpretation of contracts in general is applicable. It depends upon the *intention* of the parties. A simple affirmation of the goodness of an article is a warranty, provided it (a warranty) *appear to have been intended;* whereas the sublimest epithets that a seller ever employed to recommend his goods to a credulous buyer will be regarded as the idle phraseology of the market, unless an *intended to warranty* actually appear.' In fine, 'it is from the *intention* of the parties, as collected from the whole transaction, and from the meaning they appear to have attached to particular expressions, that the existence or non-existence of a warranty is to be inferred.'

"'Let us now consider how the rights of parties are affected by the horse being unsound at the time of the warranty. The contract being thus broken on the part of the seller, it is at the buyer's option either to treat it as a nullity, and return the horse, or to retain him, notwithstanding, and bring an action on the warranty. In the former case, the price paid is the measure of the damages he will be entitled to recover in an action; in the latter, the difference between that price and his real value. If he offer to rescind the contract and return the horse, he may also recover the expenses of his keep; but in order to do this, a positive tender is said to be necessary. No notice of the unsoundness need be given to the vender to entitle the vendee to maintain the action; nor is it necessary to bring the action immediately on discovering the unsoundness.'—'But although such a notice be not essential, yet it is always advisable to give it,

as the omitting to do so will furnish at the trial strong presumption that the horse, at the time of sale, was free from the defect complained of; thus rendering the proof of a breach of warranty more difficult. Common justice and honesty require that the commodity should be returned at the earliest period, and before it has been so changed by lapse of time as to make it impossible to ascertain, by proper tests, what were its original properties.'"

SNOW BELLS ON HORSES' FEET.

Clean the hoofs and feet and rub them well with soft soap; on a journey, to soap them twice a day may be best in some cases, but once a day, in ordinary time, will be found sufficient.

TO MANAGE A HORSE WHEN FALLEN DOWN.

If the horse is in harness, it is seldom that he can rise until he is freed from the shafts and traces. The first thing is to secure the head, and to keep it down, that he may not beat himself against the ground. Next, the parts of the harness connected with the carriage must be unbuckled—the carriage must then be backed a little way, so that he may have room to rise. If necessary, the traces must be taken off; and after the horse gets up, he must be steadied a little, until he collects himself.

GETTING THE CHEEK OF THE BIT INTO THE MOUTH.

Harsh treatment is here completely out of the question. All that can be done, is, by some mechanical contrivance, to render the thing difficult or impossible, and this may be managed by fastening a round piece of leather on the inside of the cheek of the bit.

COLTS CHEWING HALTERS.

Take scab from the wort on the inside of the leg, rub the halter thoroughly with that, and they will not be found chewing their halters very soon.

CHAPTER V.

THE VICES AND DISAGREEABLE OR DANGEROUS HABITS OF THE HORSE.*

The horse has many excellent qualities, but he has, likewise, defects, and these often amount to vices. Some are attributable to natural disposition, but the majority are attributable to bad education and wrong management.

BITING.

This is either the consequence of natural ferocity, or a habit acquired from the foolish and teasing play of grooms and stable-boys. Prevention, however, is in the power of every proprietor of horses. While he insists on gentle and humane treatment of cattle, he should systematically forbid this horse-play.

It is seldom that anything can be done in the way of cure. Kindness will aggravate the evil, and no degree of severity will correct it. "I have seen," says Professor Stewart, "biters punished until they tremble in every joint, and were ready to drop, but have never in any case known them cured by this treatment, or by any other.

* We would refer the reader to the third chapter of this book, as exceptions are taken to some of the statements in this chapter connected with the vicious habits of horses.

The lash is forgotten in an hour, and the horse is as ready and determined to repeat the offence as before. He appears unable to resist the temptation, and in its worst form, biting is a species of insanity."

Constant and laborious work is often beneficial. Some horses may be over-awed by being very bold. He may be warned by speaking to him. On approaching the horse, hold a whip in his view, ready to let it fall. If you can get hold of his head, you are safe; he may then be muzzled, or his head tied to the manger, a long rope may be fastened to the halter and run through a ring at the head of the stall, and proceed backward to the heel post; this enables a man to draw the head close up to the ring, and keep it there till the grain or water is delivered, and till the horse can be bridled, muzzled, harnessed or dressed as the case may be. He is, of course, to be released after you leave the stall, but the rope remains in place ready for use.

If you can obtain something that is exceedingly disagreeable to the taste of a horse—some bitter herb—saturate a piece of cloth, and wind it around a stick for him to bite; it will often, in connection with kind treatment, have a tendency to break him. A single short cut across the mouth on the instant will sometimes do good.

KICKING.

This, as a vice, is another consequence of the culpable habit of teasing the horse. There is no cure for this vice when it is inveterately established, and he cannot be justified who keeps a kicking horse in his stable. He is never safe, or relied on as being safe. It is foremost in the point of danger, and no treatment will always conquer. An awkward man is always sure to receive injury

from a confirmed kicker, and a timid man is never safe. Before the habit is established, a thorn-bush fastened against the partition or post will sometimes effect a cure.

A chain about 20 inches long, strapped in the centre to the horse's foot, is the most effectual remedy known to us.

Kicking in harness is a serious vice. Some horses by the least annoyance about the rump or quarters, or if the reins get under their tail they will kick at a most violent rate, endangering everything within their reach. This may be cured by looping up his fore-leg, and teaching him, by several lessons, to draw and walk on three legs; in this position he cannot kick, and in a short time his leg can be taken down, and his propensity for kicking will be found to have subsided; if not, repeat until he is entirely cured; do not put him in harness the first time his leg is looped up, but first teach him to walk on three legs, without support out of the harness. Or put on a head-stall or bridle, with twisted W, or twisted straight bitts in the mouth of the horse to be cured; then put on a common back-saddle, with thill lugs, or any strap or girth with loops on either side of the horse, is equally good; then buckle a pair of long reins, open in the middle, into the bitts, and pass them through the thill lugs or loops; one to each hind leg, above the fetlock joint; there make each rein fast to the leg, allowing sufficient length of rein for your horse to walk or trot, as the operator may think proper. Everything complete, you will have the animal commence the operation of kicking; the first will be a smart kick, and the second lighter, and so on till your horse cannot be made to kick any more.

Or the following: Take a forked stick, about two feet long, varying a little according to the size of the horses, tie the ends of the fork firmly to each end of the bridle

bit, and the other end of the stick to the lower end of the collar so as to keep the head up. A few days working in this manner will commonly suffice for a cure. The man, however, who must come within reach of a kicker should come as close to him as possible. The blow may thus become a push, and seldom is injurious.

RUNNING AWAY.

The only method which affords any probability of success is to have him always firmly in hand; and, if he will run away, and the place will admit of it, to give him (sparing neither curb, whip, nor spur,) a great deal more running than he likes. If you wish to stop the horse, if on horseback throw your bridle reins around his neck, if possible, to choke him, or choke him with your arm. If in a wagon, and running away is feared, provide a strong cord with a slipping-noose placed around his neck, if he runs, draw the cord forcibly.

CRIB-BITING.

The causes of crib-biting are various, it is often the result of imitation, idleness, and sometimes by partial starvation. The high fed and spirited horse must be mischievous, if not usefully employed. The crib-biting horse is more subject to colic than other horses, and to a species difficult of treatment and frequently dangerous. This is a bad habit, and very annoying to the owner of a horse. Various remedies have been tried, such as ironing the manger, petitions, etc. I know of no certain cure but an iron muzzle, with bars just wide enough apart to allow the horse to pick up his grain and draw out his hay with his tongue, but not to get hold of any thing with his teeth. Common bar soap is a preventive, which is to be rubbed on the edge and outside of the crib, and renewed

as often as necessary. If this habit is not broken, it will soon be imitated by every horse in the stable.

WIND-SUCKING.

This bears a close analogy to crib-biting. It arises from the same causes; the same purpose is accomplished; and the same results follow. The horse stands with his neck bent; his lips alternately a little opened and then closed, and a noise is heard as if he were sucking. If we may judge from the same comparative want of condition and the flatulence which we have described under the last head, either some portion of wind enters the stomach, or there is an injurious loss of saliva. This diminishes the value of the horse almost as much as crib-biting; it is as contagious, and it is as inveterate. The only remedies, and they will seldom avail, are tying the head up, except when the horse is feeding, or putting on a muzzle with sharp spikes towards the neck, and which will prick him whenever he attempts to rein his head in for the purpose of wind-sucking.—*Youatt.*

CUTTING.

There are some defects in the natural form of the horse, which are the causes of cutting, and which no contrivance will remedy; as when the legs are placed too near to each other, or when the feet are turned inward or outward. Some horses will cut only when they are fatigued or lame, and old; many colts will cut before they arrive at their full strength. The inside of the fetlock is often bruised by the shoe or the hoof of the opposite foot. Many expedients used to be tried to remove this; the inside heel has been raised and lowered, and the outside raised and lowered; and sometimes one operation has succeeded, and sometimes the contrary; and there was no point so

involved in obscurity, or so destitute of principles to guide the practitioner. The most successful remedy, and that which in the great majority of cases supersedes all others, is a shoe of equal thickness from heel to toe, and having but one nail, and that near the toe on the inside of the shoe; care being taken that the shoe shall not extend beyond the edge of the crust, and that the crust shall be rasped a little at the quarters.

NOT LYING DOWN.

It not uncommonly happens that a horse will seldom or never lie down in the stable. He sometimes continues in apparent good health, and feeds and works well; but generally his legs swell, or he becomes fatigued sooner than another horse. They perhaps are afraid of being caught by the halter, or they have already been cast in the night, and do not like to try it again. Such horses should be let loose in a stable at night, or in a large stall without being tied, and furnished with a tempting bed, until the habit of lying down is acquired.

TO PREVENT ROLLING IN THE STALL.

This is a very dangerous habit, and can be prevented only by tying the horse so that he can lie down, but not touch his head to the floor. This is very tiresome to the horse, and hence, if you care enough for his comfort and health, build a narrow platform, eighteen to twenty-four inches in width, slanting at an angle of thirty to forty degrees, so that it will form a pillow for his head and neck; then adjust a rope so that as he lies down his head will naturally rest on the platform, or pillow. He will not roll unless he can get his head as low as the floor of the stable.

OVERREACHING OR CLINKING.

An over-reach is a tread upon the heel of the coronet of the fore foot by the shoe of the corresponding hind foot, and is either inflicted by the toe, or by the inner edge of the inside of the shoe.

A writer in the N. E. Farmer, who is a blacksmith, cures overreaching horses, and incseases their trotting speed fifteen or twenty seconds per mile, by the following mode of shoeing, which increases the motion of the forward feet, and retards the motion of the hind ones. He makes the toe-caulks very low, standing a very little under, and the shoes set as far backward as convenient on the forward feet, with high heel-caulks, so as to let them roll over as soon as possible. On the hind feet, the heel-caulk is low and the toe-caulk high and project ing forward. Horses shod thus, travel clean, with no click.

PAWING.

Some hot and iritatible horses are restless, even in the stable, and paw frequently and violently; shackles are the only remedy, with a chain sufficiently long to enable the horse to shift his position, but they must be taken off at night to enable the horse to lie down.—*Youatt.*

SLIPPING THE HALTER.

This is a trick at which many horses are so clever, that scarcely a night passes without their getting loose. It is a very serious habit, for it enables the horse sometimes to gorge himself with food, to the imminent danger of staggers; or it exposes him, as he wanders about, to be kicked and injured by the other horses, while his restlesness will often keep the whole team awake. If

the web of the halter, being first accurately fitted to his neck, is suffered to slip only one way, or a strap is attached to the halter and buckled round the neck, but not sufficiently tight to be of serious inconvenience, the power of slipping the halter will be taken away.—*Youatt.*

TRIPPING.

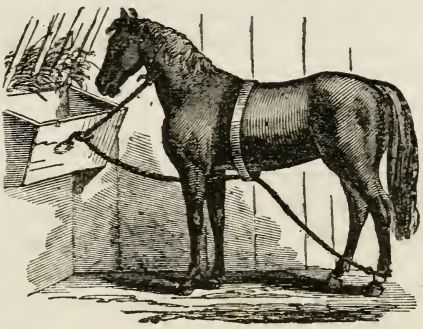
He must be a skillful practitioner or a mere pretender who promises to remedy this habit. If it arises from a heavy fore-hand, and the fore-legs being too much under the horse, no one can alter the natural frame of the animal; if it proceeds from tenderness of the foot, grogginess, or old lameness, these ailments are seldom cured. Also if it is to be traced to habitual carelessness and idleness, no whipping will rouse the drone. A known stumbler should never be ridden, or driven by any one who values his safety or his life. A tight hand or a strong-bearing rein are precautions that should not be neglected.

If the stumbler has the foot kept as short, and the toe pared as close as safety will permit, and the shoe is rounded at the toe, or has that shape given to it which it naturally acquires in a fortnight, from the peculiar action of such a horse, the animal may not stumble quite so much; or if the disease which produced the habit can be alleviated, some trifling good may be done, but in almost every case a stumbler should be got rid of, or put to slow and heavy work—*Youatt.*

HORSES JUMPING FENCES.

Pass a small and strong cord around his body, just behind his shoulders, and tie the halter to this cord between his fore-legs so as to leave the distance about two feet from the cord to his head, if then he attempt to jump, he is compelled to throw his head forward, which draws hard on the cord and causes it to cut into his back and he instantly desists. The cord should not be more than a quarter of an inch in diameter.

TO BREAK A HORSE FROM PULLING AT THE HALTER.



The accompanying cut will illustrate an effectual method of preventng and curing a horse from pulling at the halter. It should not be applied in a stable unless the animal is watched, as there is danger that he may throw himself and receive injury.

Put a strong strap or rope around the neck, and another strap with a ring in it around the pastern of one of the *hind* feet, and attach a strong rope to the ring, and pass it under a firm strap or cirsingle, buckled loosely around the girth, just back of the shoulder. Continue the rope between the fore legs and through a hole or ring in the manger, or post, where the horse will pull, and then tie it to the strap around the neck—then let him pull "to his heart's content." A few such trials will most likely subdue him. The harder he pulls back, the harder his hind foot is pulled forward, and the experimenter will be surprised to see how little the horse can do—he will not be likely to even get his hind foot off the ground.

HOW TO TAME WILD HORSES.

The person of whom I obtained this receipt, paid Perry Plancher, the Arabian Horse tamer, $20 for it, and has been selling it through the country for $1,00. We have no faith in it. Take the warts from the legs dry and powder them, blow up his nose, then take a few drops of the oil of arodium on your hand, and rub on his nose.

CHAPTER VI.

OPERATIONS, ETC., ETC.

SETONS.

Setons are useful in various cases in abscesses, such as occur in poll evil; in deep fistulous wounds they are indispensable. They promote discharge in the neighborhood of an inflammation. They are made of tow and horse hair, braided together, or a small cord or a strap of leather may be used; they are inserted by means of an instrument resembling a large needle, either through abscesses, or the base of ulcers with deep sinuses, or between the skin and the muscular or other substances beneath. They are retained there by the ends being tied together, or by a knot at each end. The tape is moved in the wound twice or thrice in the day, and occasionally wetted with spirits of turpentine, or some acrid fluid, in order to increase the inflammation which it produces, or the discharge which is intended to be established

In inflammation of the chest or intestines, a rowel is preferable to a seton, where the inflammation has long continued, but not intense. Rowels will be serviceable by producing an irritation and discharge. The action of rowels is slower than setons or blistering.

CASTRATION.

'Youatt says" For the common agricultural horse the age of four or five months will be the most proper time, or, at least, before he is weaned. Few horses are lost when cut at that age.

"If the horse is designed either for the carriage, or for heavy draught, the farmer should not think of castrating him until he is at least a twelvemonth old; and, even then, the colt should be carefully examined. If he is thin and spare about the neck and shoulders, and low in the withers, he will materially improve by remaining uncut another six months; but if his forequarters are fairly developed at the age of twelve months, the operation should not be delayed, lest he become heavy and gross before, and perhaps has begun too decidedly to have a will of his own.

"No preparation is necessary for the sucking colt, but it may be prudent to bleed and to physic one of more advanced age. In temperate weather, he will do much better running in the field, than nursed in a close and hot stable. The moderate exercise that he will take in grazing will be preferable to perfect inaction.

"The old method of opening the scrotum (testicle bag) on either side, and cutting off the testicles, and preventing bleeding by a temporary compression of the vessels, while they are seared with a hot iron, must not, perhaps, be abandoned;

"Another method of castration is by *Torsion*. An incision is made into the scrotum, and the *vas diferens* is exposed and divided. The artery is then seized by a pair of forceps, contrived for the purpose, and twisted six or seven times round. It retracts without untwisting the coils, and bleeding ceases. The most painful part of the operation—the operation of the firing-iron or the clams—is avoided, and the wound readily heals."

BLEEDING.

This operation is performed with a fleam or a lancet. The first is the common instrument, except in skillful hands. The lancet, however, has a more surgical appearance, and will be adopted by the veterinary practitioner. A bloodstick is used to strike the fleam into the vein. This is sometimes done with too great violence, and the opposite side of the coat of the vein is wounded. Bad cases of inflammation have resulted from this. If the fist is doubled, and the fleam is sharp and is struck with sufficient force with the lower part of the hand, the bloodstick may be dispensed with.

For general bleeding the jugular vein is selected. The horse is blindfolded on the side on which he is to be bled, or his head turned well away. The hair is smoothed along the course of the vein with the moistened finger; then, with the third and little finger of the left hand, which holds the fleam, pressure is made on the vein sufficient to bring it fairly into view, but not to swell it too much, for then presenting a rounded surface, it would be apt to roll or slip under the blow. The point to be selected is about two inches below the union of the two portions of the jugular at the angle of the jaw. The fleam is to be placed in a direct line with the course of the vein, and over the precise centre of the vein, as close to it as possible, but its point not absolutely touching the vein. A sharp rap with the hand on that part of the back of the fleam immediately over the blade, will cut through the vein, and the blood will flow. A fleam with a large blade should always be preferred. A quantity of blood drawn speedily will also have far more effect on the system than double the weight slowly taken, while

the wound will heal just as readily as if made by a smaller instrument. A slight pressure, if the incision has been large enough and straight, and in the middle of the vein, will cause the blood to flow sufficiently fast; or, the finger being introduced into the mouth between the tushes and the grinders, and gently moved about, will keep the mouth in motion, and hasten the rapidity of the stream by the action and pressure of the neighboring muscles.

When sufficient blood has been taken, the edges of the wound should be brought closely and exactly together, and kept together by a small sharp pin being passed through them. Round this a little tow should be wrapped, so as to cover the whole of the incision; and the head of the horse should be tied up for several hours to prevent his rubbing the part against the manger. In bringing the edges of the wound together, and introducing the pin, care should be taken not to draw the skin too much from the neck, otherwise blood will insinuate itself between it and the muscles beneath, and cause an unsightly and sometimes troublesome swelling.

The blood should be received into a vessel, the dimensions of which are exactly known, so that the operator may be able to calculate at every period of the bleeding the quantity that is subtracted. Care likewise should be taken that the blood flows in a regular stream into the centre of the vessel, for if it is suffered to trickle down the sides, it will not afterwards undergo those changes by which we partially judge of the extent of inflammation. The pulse, however, and the symptoms of the case collectively, will form a better criterion than any change in the blood. Twenty-four hours after the operation, the edges of the wound will have united, and the

pin should be withdrawn. When the bleeding is to be repeated, if more than three or four hours have elapsed, it will be better to make a fresh incision rather than to open the old wound.

In local inflammation, blood may be taken from any of the superficial veins. In supposed affection of the shoulder, or of the fore-leg or foot, the *plate* vein, which comes from the inside of the arm, and runs upwards directly in front of it towards the jugular, may be opened. In affections of the hind extremity, blood is sometimes extracted from the *saphæna*, or thigh-vein, which runs across the inside of the thigh. In foot cases it may be taken from the coronet, or, much more safely, from the toe; not by cutting out a piece of the sole at the toe of the frog, which somtimes causes a wound difficult to heal, and followed by festering, and even by canker; but cutting down with a fine drawing-knife, called a searcher, at the union between the crust and the sole at the very toe until the blood flows, and, if necessary, encouraging its discharge by dipping the foot in warm water. The meshwork of both arteries and veins will be here divided, and blood is generally obtained in any quantity that may be needed. The bleeding may be stopped with the greatest ease, by placing a bit of tow in the little groove that has been cut, and tacking the shoe over it.*— *Youatt.*

* A great improvement has lately been introduced in the method of arresting arterial hemorrhage. The operation is very simple, and, with common care successful. The instrument is a pair of artery forceps, with rather sharper teeth, than the common forceps, and the blades held close by a slide. The vessel is laid bare, detached from the cellular substance around it, and the artery then grasped by the forceps, the instrument deviating a very little from the line of the artery. The vessel is now divided close to the forceps, and behind them, and the forceps are twisted four or five times round. The forceps are then loosened, and, generally speaking, not more than a drop or two of blood will have been lost. This method

THE PULSE.

The pulse is a very useful assistant to the veterinary surgeon, whose patients cannot describe either the seat or degree of ailment or pain. In a state of health, the heart beats in a horse about thirty-six times a minute. This is said to be the *standard* pulse—the pulse of health. Where it beats naturally, there can be little materially wrong. The most convenient place to feel the pulse, is at the lower jaw, a little behind the spot where the submaxillary artery and vein, and the parotid duct, come from under the jaw. There the number of pulsations will be easily counted, and the character of the pulse, a matter of fully equal importance, will be clearly ascertained.

When the pulse reaches fifty or fifty-five, some degree of fever may be apprehended, and proper precaution should be taken. Seventy or seventy-five will indicate a dangerous state, and put the owner and the surgeon a little on the alert. Few horses long survive a pulse of one hundred, for, by this excessive action the energies of nature are speedily worn out.

Some things should be taken into account in forming our conclusion of the pulse. Exercise, a warm stable, and fear, will wonderfuly increase the number of pulsations.

If a *quick* pulse indicate irritation and fever, a *slow*

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of arresting bleeding has been applied by several scientific and benevolent men with almost constant success. It has been readily and effectually practised in docking, and patients have escaped much torture, and tetanus lost many a victim. The forceps have been introduced, and with much success, in castration, and thus the principal danger of that operation, as well as the most painful part of it, is removed. The colt will be a fair subject for this experiment. On the sheep and the calf it may be readily performed, and the operator will have the pleasing consciousness of rescuing many a poor animal from the unnecessary infliction of torture.—*Spooner.*

pulse will likewise characterize diseases of an opposite description. It accompanies the sleepy stage of staggers, and every malady connected with deficiency of nervous energy.

The heart may be excited to more frequent and more violent action. It may contract more powerfully upon the blood, which will be driven with greater force through the arteries, and the expansion of the vessels will be greater and more sudden. Then we have the *hard* pulse —the sure indicator of considerable fever, and calling for the immediate and free use of the lancet.

Sometimes the pulse may be hard and jerking, and yet *small.* The stream though forcible is not great. The practitioner knows that this indicates a dangerous state of disease. It is an almost invariable accompaniment of inflammation of the bowels.

A *weak* pulse, when the arterial stream flows slowly, is caused by the feeble action of the heart. It is the reverse of fever, and expressive of debility.

The *oppressed* pulse is when the arteries seem to be fully distended with blood. There is obstruction somewhere, and the action of the heart can hardly force the stream along, or communicate pulsation to the current.

The state of the pulse should be carefully regarded during bleeding. The most experienced practitioner cannot tell what quantity of blood must be abstracted in order to produce the desired effect. The change of the pulse can alone indicate when the object is accomplished; therefore, the operator should have his finger on the artery during the act of bleeding, and, comparatively regardless of the quantity, continue to take blood, until, in inflammation of the lungs, the oppressed pulse, becomes

fuller and more distinct, or the strong pulse of considerable fever is evidently softer, or the animal exhibits symptoms of faintness.

It is important to distinguish between the pulse of fever and that of inflammation. We may have a pulse of the greatest rapidity, as in influenza, and yet no one part of the body much inflamed. We have known the pulse of the horse more than tripled, and the animal still recover; and, on the other hand, in cases of inflammation, a pulse of 60 has betokened great danger, and, in some cases, has been succeeded by death.

CLYSTERS.

The principal art of administering a clyster consists in not frightening the horse. The pipe, well oiled, should be very gently introduced, and the fluid not too hastily thrown into the intestine; its heat being as nearly as possible that of the intestine, or about 96° of Fahrenheit's thermometer.

These are useful in hastening the evacuation of the bowels when the disease requires their speedy action.

Two ounces of soft or yellow soap, dissolved in a gallon of warm water, will form a useful aperient clyster. For a more active aperient, half a pound of Epsom salts, or even of common salt, may be dissolved in the same quan ty of water. A stronger injection, but not to be used if much purgative medicine has been previously given, may be composed of an ounce of Barbadoes aloes, dissolved in two or three quarts of warm water. If nothing else can be procured, warm water may be employed.

In cases of over-purging or inflammation of the bowels, the injection must be of a soothing nature. It may consist of gruel alone, or, if the purging is considerable, and

difficult to stop, the gruel must be thicker, and four ounces of prepared or powdered chalk, well mixed with or suspended in it, with two scruples or a drachm of powdered opium.

No oil should enter into the composition of a clyster, except that linseed oil may be used for the expulsion of the ascarides, or needle-worms.

In epidemic catarrh, when the horse sometimes obstinately refuses to eat or to drink, his strengh may be supported by nourishing clysters; but they should consist of thick gruel only, and not more than a quart should be administered at once.

TRACHEOTOMY.

"This operation consists in making an opening into the windpipe to admit air to the lungs, when the natural passage is obstructed by foreign bodies, or when its calibre is lessened by tumefaction occasioned by disease. In severe cases of laryngitis, strangles, and their kindred diseases, when the patient seems almost suffocated, tracheotomy should be immediately performed. In performing the operation, we select a spot about six inches below the throat, in front of the neck, and over the region of the windpipe; an incision is to be made with a common penknife, (in lieu of a better instrument,) to the extent of two or three inches, in a downward direction, so as to lay bare the trachea; having exposed space sufficient, a circular piece between two rings, corresponding to the size of the tube, is to be cut out, and a short tube inserted, which can be confined in position by means of tape passed around the neck. When the obstruction is removed, or the fances restored to their natural state, remove the tube, bring the edges of the integuments together, and sew them up."—*Dr. Dadd.*

PHYSICING.

This is often necessary—but it has injured the constitution and destroyed thousands of animals, when unnecessarily or improperly resorted to. When the horse comes from grass to dry feed, or from the open air to the heated stable, and is becoming too fat, or has surfeit, or grease, or mange, or is out of condition from inactivity of the digestive organs, a dose of physic is serviceable; but the physicing of all horses, and the too frequent method of exercising the animal when under the operation of physic, cannot be too strongly condemned.

A horse should be carefully prepared for the action of physic. Mashes should be given until the dung becomes softened. Five drachms of aloes, given when the dung has thus been softened, will act much more effectually and much more safely than seven drachms, when the lower intestines are obstructed by hardened dung.

On the day on which the physic is given, the horse should have exercise, but after the physic begins to work, he should not be moved from his stall.

A little hay may be put into the rack. As much mash should be given as the horse will eat, and as much water, with the coldness of it taken off, as he will drink. If he refuses to drink warm water, it is better that he should have it cold, than to continue without taking any fluid; but in such case he should not be suffered to take more than a quart at a time, with an interval of at least an hour between each draught. The cleansing powder will be found an excellent physic. The Barbadoes aloes, although sometimes very dear, should alone be used. The dose, with a horse properly prepared, will vary from four to seven drachms.

DOCKING.

The horse's tail is regarded by some as a useless appendage, and fashion requires it should be shortened. The tail was given to the horse to fight the blood-sucking flies. There can be no question of its utility to the horse. To dock it, deprives him of a portion of his strength, and he has no protection from flies, which for two months of the year are exceedingly annoying.

The animal should be cast, the point of amputation having been selected, the operator feels for a joint or articulation, just posterior to which he commences a circular incision, carrying the knife right round the tail to the point of commencement, cutting down to the fascia. The integuments are then to be forcibly drawn upwards, while the operator disarticulates the joint by making an incision right through it. The coccygeal arteries are to be secured by ligature.

The integuments. instead of being. retracted, above the lower end of the bone, are now below it, and thus can be made to protect it from injuries. Two or three stitches are now needed to approximate the edges of the wound, and the operation is finished, without much loss of blood, and with little if any pain to the subject. The after treatment is very simple; cold water, or some tincture of aloes, will complete the cure. If they should not, owing to profuse suppuration, use pyroligneous acid, and give a dose of medicine."

NICKING.

Nicking is another fashionable barbarism that very few horses escape. The world of horsemen have decided, *no*

tail no horse; and if an animal does not describe an angle of forty-five with his tail, he is said to *carry none.*

The usual mode of operating, is to make a sub-cutaneous section of the muscles, the use of which is to depress the tail. The knife is introduced as near to the anus as possible on one side of the tail, between the bone and muscle; then, with a sort of sawing motion—the back of the knife being towards the bones—the muscle is divided, which may be known by the edge of the knife coming in contact with the integuments. This is repeated on the other side, and the operation is finished. The horse is generally fettered by a rope from the neck, secured to each hind leg; he has also a twitch on the nose. It not unfrequently happens that horses lose an enormous quantity of blood after the operation; but that results from want of anatomical knowledge. The coccygeal arteries are severed, which the surgeon knows how to avoid. Amateur operators often find that the subject of their experiment is seized with locked-jaw; and in other cases the tail curves laterally towards the body. In the former, some unnecessary mangling has been performed, and in the latter case, one of the *curvatores coccygis* has been partly or wholly severed, which allows the associate muscle on the other side to draw the tail that way. Hence the necessity for skillful operators.

BLAZE OR STAR.

When we have a pair of horses that match well in every respect, except that one has a blaze or star in the face, it becomes very interesting and important to know how to make their faces match.

Take a piece of leather the size you want the blaze or star: spread it with warm pith and apply it to the

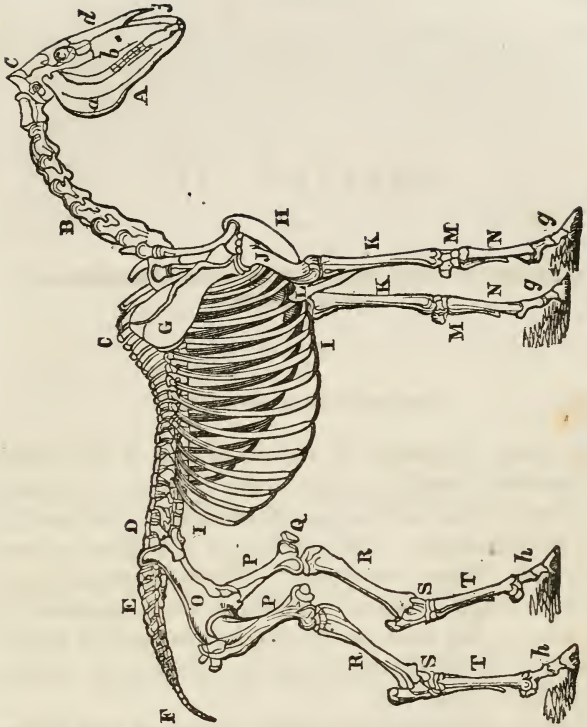
horse's face: let it remain two or three days, by which time it will bring off the hair clean, and make the part a little tender; then take of elixir vitriol a small quantity; then anoint the part two or three times; or, of a very common weed called smart weed a small handful, bruise it and add to it about a gill of water, use it as a wash until the face gets well, when the hair will grow out entirely white.

TO SPOT A WHITE HORSE WITH BLACK SPOTS.

Take litharage, three ounces; quick lime, six ounces; beat it fine and mix it together; put it into a pan and pour a sharp ley over it; then boil it and you will have a fat substance swim on top, with which anoint the horse in such places as you design to have black, and it will turn to the color immediately.

DESCRIPTION OF A SKELETON OF A HORSE.

A The Head.
a The posterior maxillary or under jaw.
b The superior maxillary or upper jaw. A little lower down than the letter is a foramen, through which pass the nerves and blood-vessels which chiefly supply the lower part of the face.
c The orbit, or cavity containing the eye.
d The nasal bones, or bones of the nose.
e The suture dividing the parietal bones below from the occipital bones above.
f The inferior maxillary bone, containing the upper incisior teeth.
B The Seven Cervical Vertebræ, or bones of the neck.
C The Eighteen Dorsal Vertebræ, or bones of the back.
D The Six Lumbar Vertebræ, or bones of the loins.
E The Five Sacral Vertebraæ, or bones of the haunch.
F The Caudal Vertebræ, or bones of the tail, generally about fifteen.
G The Scapula, or Shoulder-Blade.
H The Sternum, or fore part of the chest.
I The Costæ, or ribs, seven or eight articulating with the sternum, and called the *true ribs*, and ten or eleven united together by cartilage, called the *false ribs*.
J The Humerus, or upper bone of the arm.
K The Radius, or upper bone of the arm.
L The Ulna, or elbow. The point of the elbow is called the Olecranon.
M The Carpus, or knee, consisting of seven bones.
N The Metacarpal bones. The larger metacarpal, or cannon, or shank in front, and the smaller metacarpal, or splint bone behind.



g The fore pastern and foot, consisting of the Os Suffraginis, or the upper and larger pastern bone, with the sesamoid bones behind, articulating with the cannon and greater pastern; the Os Coronæ, or lesser pastern; the Os Pedis, or coffin bone; and the Os Naviculare, or Navicular, or shuttle-bone, not seen, and articulating with the smaller pastern and coffin bones.

h The corresponding bones of the hind feet.

O The Haunch, consisting of three portions, the Ilium, the Ischium, and the Pubis.

P The Femur, or Thigh.

Q The Stifle-joint with the Patella.

R The Tibia, or proper leg bone—behind is a small bone called the fibula.

S The Tarsus, or Hock, composed of six bones. The prominent part is the Os Calcis, or point of the hock.

T The Metatarsals of the hind leg.

CHAPTER VII.

DISEASES OF THE BRAIN, RESPIRATORY ORGANS AND AIR PASSAGES.

STAGGERS AND APOPLEXY.

A want of balance in the circulation of the blood, an unnatural quantity going to the brain, so overcomes its energies that the diseases mentioned at the head of this chapter follow. They differ only in degree, and may arise from different conditions. Where the animal is vigorous, well fed, and full of fluids, active congestion will be present, but when poorly fed, and reduced in flesh; a loss of energy of the brain may be followed by passive congestion.

Violent exercise, such as heavy loads and hard drives, tight collars, too tight curb reins, any cause that forces too much blood to the head or prevents its return by the viens, may be causes of this disease, also after long fasting; too much food unnaturally distending the stomach, sympathetically affecting the brain, will produce it.

STAGGERS.

Megrims is the mildest of these affections.

Symptoms.—When the horse is drawn quickly, he will stop suddenly, shake the head and show symptoms of

giddiness. This may soon pass over and he may go on as if nothing had occurred. If more serious, he may fall to the ground or suddenly turn several times around first; he may lie quiet, or struggle violently. If it be a horse of full habit, well fed, three or four quarts of blood better be drawn at once.

TREATMENT—Cease using him for a time, give mild physic, such as physic ball, powdered aloes, 6 drachms, a little honey to make the powder tenacious enough to administer, physic or drench pulverized aloes, 6 drachms, syrup of bucthorn, 1 ounce, tincture ginger, 1 ounce, or croton oil from 20 to 30 drops. Give an occasional laxitive ball, powdered aloes, 3 drachms, powdered sulphur, 1 do., powdered mandrake 2 do.

To be formed into a bolus with honey or mucilage. Stop hearty and dry feed, and let mashes and green feed be substituted. If not cured at first, the animal will be useless, as the diseased action will become fixed. Severe cold weather in winter, by determining the blood to the brain, predisposes to this disease.

APOPLEXY.

Apoplexy is a serious form of the diseases we have mentioned.

The Symptoms which mark its approach are loss of appetite, dullness, stupidity, a somewhat staggering gait, he stands with his head down, or rests it on his manger and seems balancing and ready as often he does to suddenly fall, he is sleepy, eye dull, he chews his lock of hay for a moment and relapses into a stupor; as the disease advances his breathing becomes slow, loud and labored, the pulse is slow, the veins in the neck full, the mouth cold, and death closes the scene.

Post mortem examination of the brain reveals a highly congested condition of the blood vessels of the brain.

THE TREATMENT.—Bleed very copiously, if the horse be strong and vigorous, followed by active purging, with such articles as we have indicated in megrims or staggers, together with rest and light food. If the ani-

mal be naturally feeble, if bled it had better be sparingly and be content with physic and laxatives. One grain of strychnine, 3 times a day, might give tone to the nervous system combined with 12 grains of flowers of zinc. The animal probably will never be fit for hard service.

PHRENTIS OR INFLAMMATION OF THE BRAIN.

By Phrentis we understand inflammation of the substance of the brain and its investing membranes.

SYMPTOMS.—Hanging of the head, dullness, watery eyes, and sleepiness; he is letharic, droops his head; if aroused, he stares around and then slumbers again. This state does not ordinarily last but a few hours, or at most a few days. A new train of symptoms manifest themselves. He is wide awake, to sound his ears are up and his eyes glare, he is restless, paws and moves about, whinners, dashes, plunges, bites and kicks; thus he continues until water compresses the brain or its substance suffers lesion, when exhaustion, stupor and sleep, show a tendency to a fatal issue.

TREATMENT.—Bleed freely, purge freely. There is no disease that will bear copious purging with so much benefit as the one of which we are treating.

HYDROPHOBIA OR MADNESS.

This alarming and fatal disease results from the bite of a rabid animal, as the dog, cat, or wolf.

SYMPTOMS.—The horse stops, looks round, staggers and falls. He rises soon again, staggers and falls, soon he becomes furious, stamping and biting, and endeavoring to demolish everything around him. Like the human being, the horse has a dread of water—the dread seems to arise from the severe spasms of the muscles called into action in the act of diglutition, and not from any dread of the water by itself considered. When fully established, this disease is considered incurable.

When it is known that the animal has been bitten, cauterize the wound freely and deeply with nitrate of silver, wash it out with chloride of soda.

The disease may remain latent for weeks or months before showing itself, hence the necessity of closely watching the animal, if bitten or supposed to be bitten, for some time.

INFLUENZA OR HORSE-AIL.

This disease is most prevalent in cold, ungenial weather, and is most frequent in the spring — a cold, wet spring — and especially among young horses, and those in high condition, or made up for sale, or that have been kept in hot stables; more generally in cities where a large number are kept. If a horse can pass through this disease and come out right side up, he can be safely recommended as one having been *through the mill.* It is, beyond doubt, contagious — sometimes raging over large districts, so that scarcely a stable escapes, and at others, being confined to a neighborhood.

SYMPTOMS.—Of these there is a great variety at its commencement. The first symptom is, debility. The horse appears dumpish, refuses to eat, mouth hot, pulse quick; in the course of six or twelve hours, the pulse increases, appetite diminishes, legs and eye-lids swell, (usually increase to about the third day.) This disease may end in distemper, chronic cough, a bad discharge from the nose, and inveterate cases in glanders.

TREATMENT.—Give the animal the benefit of a pure atmosphere. If the limbs are cold, give them a good rubbing. If the pulse is full and strong, (not otherwise,) bleed with care. In some cases, it would be advisable to bleed from the eye, or mouth. Strict attention should be paid to the diet. No grain but mashes, gruel substituted for water; scalded shorts, green grass, and carrots, if they can be procured, if not, hay, offered with the hand, dipped in water salted. In some cases, it is necessary to force them to eat, or give them an injection of gruel.

A plethoric horse should be half starved. If the throat is sore, rub it with warm vinegar and salt, or blister; steam the nostrils, to encourage the discharge; walk the horse a little, for exercise; administer the following: Oil of Croton, five drops; Nitrate of potassa, 4 to 6 drachms; Potassio-tartrate of antimony, 1 drachm; spirit of nitric ether, 4 drachms to 1 ounce; solution of acetate of ammonia, 2 to 4 ounces; warm water sufficient to make a draught.

Sometimes four drachms of bi-tartrate of potassa may be added to the above; and, when the head appeared much affected, a drachm of camphor. This draught may generally be administered once, but sometimes twice a day, the croton oil being omitted after the first dose: after the first day, two drachms of powdered gentian may be added; and after the second or third day, a ball may be substituted for the draught, consisting of: nitrate of potassa, 3 drachms; potassio-tartrate of antimony, 1 drachm; powdered gentian root, 2 drachms; powdered pimento berries, 1 drachm; treacle sufficient to form a ball.

SPASMS OF THE LARYNX AND LARYNGITIS.

The larynx is an irregular cartilaginous tube, forming the upper extremity of the wind pipe, and is the organ which produces that peculiar sound called *neighing*. It affords free passage in its normal state for respiration, and also attachment for numerous muscles. Its internal cavities are protected by the common membrane termed *mucous*, which at times become the seat of a disease known as laryngitis.

The disease appears to be analogous to croup (in the human family.) Spasm of the larynx may result from a mucous affection, induced by indigestion.

SYMTOMS OF SPASM OF THE LARNYX.—Sometimes the disease manifests itself in a moment, as it were, with a most terrible severity; the animal begins to gasp for

breath; the eyeballs protrude, and the neck is carried in a line with the back; the flanks heave with most excessive violence, and every time the poor beast inspires air, a sound is emitted, which will vary in its character and intensity according to the vigor of the spasm. As the disease proceeds, the general symptoms become more violent—the mucous membrane of the mouth assumes a purple color; the animal becomes partially unconscious; he rushes wildly from place to place, as though seeking in vain for aid; the body becomes suffused with streamy perspiration. Youatt says, in acute laryngitis the blood must be abstracted, from the jugnlar vein, copiously, depending on the degree of inflammation, and not forgetting that he has to do with inflammation of the mucous membrane, and that what he does he must do quickly; bleed, until the pulse flutters or the coustitution is evidently affected.

Next must be given the fever medicine, the digitalis, nitre, and emetic tartar, with aloes. Aloes may here be safely given, because the chest is not yet implicated. To this must be added, and immediately, a blister, and a sharp one. The surgeon is sure of the part, and he can bring his counter-irritant almost into contact with it.

Treatment.—Nauseants, counter-irritants and tracheotomy are the principal agents, in view of immediate relief. When the patient is attacked suddenly, and shows all the worst features of the disease, he can only be relieved by a surgical operation called tracheotomy. The operation is not considered a dangerous one, yet the services of a qualified person are indispensable; as also in cases which result from the presence of morbid growths in the vicinity of the larynx, surgical skill must be sought. Lobelia is considered a very good relaxant; it is extolled very highly by some physicians for the cure of asthmatical complaints, and for relaxing rigid parts; it has been used for a number of years on all classes of domestic animals, and we consider it a valuable anti-spasmodic. A strong infusion of lobelia can be brought in contact with the horse's nostrils by means of a sponge, and perhaps

prove as beneficial as ether. Counter irritants, applied externally in the region of the throat and chest, are generally recommended; the common hartshorn liniment, essence of mustard, or a mixture composed of equal parts of olive oil, tincture of capsicum, and lobelia, are among the most efficient remedies for this purpose. The rectum must be kept empty, by stimulating clysters; all food to be withheld until the worst symptoms are past, when some thin gruel, sweetened with honey, may be allowed, cold or warm, as the season permits, very good for relieving laryngitis, applied by means of sponges to the throat.

In chronic cases, when the glandular organs around the throat are swollen, a stimulating liniment will be indicated, which should be rubbed in, night and morning, the animal to have a nutritious diet, and to be drenched as follows: Balsam of fir, 1 ounce, sweet spirits of nitre, 2 ounces, syrup of garlic, 4 ounces, mix.

DOSE.—One sixth part to be given every night in a pint of thin gruel.

PNEUMONIA OR INFLAMMATION OF THE LUNGS.

In this disease there are three well marked stages.

1st. That of congestion.

2d. When inflammation is fully developed.

3d. That of suppuration or formation of matter.

In the 1st stage the vessels are merely engorged with blood and the air-cells partly filled with a sero-mucus bloody effusion.

In the 2d stage the disease in the lungs has advanced and a plastic extravasation has taken place in the air-cells, and the tissue connecting them are filled with a bloody concrete lymph.

In the 3d stage the place of the plastic secretion has been supplied by a purulent fluid.

The disease may affect one lung or both, being much more grave in the latter case.

The causes of pneumonia, are sudden transitions from heat to cold, a change from a warm stable to a colder one; the most frequent is leaving the horse to stand in a brisk wind, after hard driving, or being in a free perspiration. This sudden check to perspiration causes the blood to recede from the surface and crowds it hurtfully on internal parts, producing bronchitis, pneumonia or pleurisy.

Symptoms.—It is usually ushered in by a shivering fit, the horse is cold all over, reaction after a time takes place and the body becomes warmer than natural, but the extremities remain intensely cold; this condition peculiarly marks the disease; it is an early symptom commencing in its incipient or forming stage. The pulse at first is often oppressed and obscure, without much acceleration in its motion. The breathing is quick; he feels the need of pure air, for the air cells being more or less obstructed, the atmospheric air is not brought in contact with the blood, to effect in the latter that change so essential to life; the animal refuses to lie down because every muscle that aids in respiration is called into action, and those of the spine and shoulders can be used more advantageously as he stands.

If when wearied out he lies down, it is but for a moment.

It may be regarded as a favorable symptom to find in the morning that the horse was down during the night.

It may not be an easy matter to distinguish pneumonia from pleurisy, and in fact they are often united.

Pleurisy is a more acutely painful disease; auscultation here would be valuable.

In pneumonia healthy murmur is changed to a crepitating or crackling sound, and wherever heard will indicate the extent of the disease.

As the disease advances and lympth is poured out, the lung becomes hepatized or hard like liver, and over such points no respiratory murmur will be heard, for no air permeates such portions. By a careful comparison of res-

piration on each side of the horse, you may know very satisfactorily whether one or both lungs are diseased.

If the disease still progresses, those inflamed and heapatized portions sappurate, an abscess forms, and matter may be discharged by coughing.

In pleurisy, the air cells are not implicated, and the respiratory murmur will be heard at first over the whole of the lungs. (The reader will bear in mind that the thin membrane which covers the lungs and lines the inside of the chest is called the pleura, and that inflammation of this membrane is pleurisy.) A dry friction sound will be heard in the commencement of pleurisy. Plastic lymph may exude from the inflamed surface, or the vessels may relieve themselves by pouring out water between the lung and side, the respiratory murmur disappearing in proportion as the water accumulates.

TREATMENT.—This may be commenced by a good bleeding, but to be of much service it should be done at the commencement of the disease, followed by emetic tartar and nitre. A drachm of the former and three of the latter every eight hours, equalize the circulation, by rubbing the extremities, giving light laxitive food, as bran mashes; throw warm blankets over the animal, hanging down to the floor, and place vessels of hot water in which put hot stones or bricks, and sweat freely, also opium and calomel, one scruple of the former and two of the latter twice a day. The sides of the chest may be thoroughly blistered, the irritation on the surface diverting the inflammation from the lungs.

There is another article very efficient in this disease in the human subject, and I think it must operate equally favorable on animals. I refer to the Veratrum Viride. The tincture, as prepared by Dr. W. C. Norwood, or the extract, as prepared by Tilden & Co., N. Y.

This medicine may confidently be relied on to control the actions of the heart and arteries, reducing the pulse in the human subject from 120 beats in a minute to 60 or even 40.

In giving this remedy, the pulse should be closely

watched, and when down to the natural standard, discontinued until it begins to rise again; probably from twenty to sixty drops every four hours, until it produces slowness of pulse, would be an appropriate dose; should much weakness follow an over dose, a dose or two of spirits would overcome the prostration.

It must be observed here that cathartic medicine in this disease must be used with great caution, and a common fault is to do too much; the restoring powers of nature are ignored, dose follows dose in unjustifiable rapidity; blood is shed with fearful profusion, and the suffering animal sinks under the combined attack of disease and injudicious treatment.

In regard to blood letting, as we said at the commencement, one judicious abstraction of blood would be advisable; its repetition would depend upon the strength of the pulse and appearance of the blood first drawn; if this is free from a sizy thick buffy coat, its repetition is uncalled for, neither will the opposite condition always warrant it. Rowels and setons are too slow in their operation to meet the urgent symptoms, and are only beneficial when the disease becomes chronic.

PLEURISY.

The treatment proper for pneumonia, as a general rule, will be applicable to pleurisy. Bleeding is called for more urgently in the latter disease, and will be better borne than in pure inflammation of the lungs; if water accumulate in the chest, the case is not hopeless; a powder, composed of squill, calomel, and nitre, repeated three or four times a day, will accelerate the absorption of the fluid; blisters also to the chest will be appropriate.

After recovery from either of these diseases, the patient should be treated with care and great tenderness for some time; all hard exercises, fast drives and exposures to wet or cold, should be sedulously guarded against, by giving the parts diseased time to heal and become sound;

chronic irritations indicated by short breathing and troublesome coughs, will be avoided.

CONSUMPTION.

This malady extends alike to horses as to human subjects. It is not hereditary, but the conformations which lead to this disease are, and thus far the disease.

If a narrow-chested, flat-sided horse is attacked by inflammation of the lungs, or severe catarrhal fever, experience tells us that we shall have more difficulty in subduing the disease in him, than in one deeper in the girth or rounder in the chest.

If such animals, however, are used in the country where they have the advantage of pure air, simple yet nutritious food, and judicious management, they may live to the average age of horses generally. There are locations that are favorable to the development of consumption, such as low, wet lands, where the humid atmosphere prevents a full and free evaporation of the insensible perspiration; such an atmosphere is no less injurious than that of a crowded, unventilated stable.

The principal cause of this disease will be found in the evils of domestication. Numerous instances have been known where the horse and cattle that have been subject to these and kindred diseases have entirely recovered by their removal from low, damp stables to dry, warm and airy ones.

SYMPTOMS.—The horse is sadly emaciated—he long continues so—his coat stares—his skin clings to his ribs—his belly is tucked up, notwithstanding that he may have plenty of mashes, and carrots, and green meat, and medicine—his former gaiety and spirit do not return, or if he is willing to work, he is easily tired, sweating on the least exertion, and the sweat most profuse about the chest and sides—his appetite is not restored, or, perhaps,

never has been good, and the slightest exertion puts him completely off his feet. The flanks heave a little more laboriously—heaving is painfully quickened when sudden exertion is required—he coughs sorely, and discharges from the nose a mucus tinged with blood, or a fluid decidedly purulent—the breath becomes offensive—the pulse is always above 40, and strangely increased by the slightest exertion.

TREATMENT.—If in the spring of the year, a run of grass may be tried—invigorate the system by good nutritious food—gentle exercise, pure air, and if the weather be cold, warm clothing, with the addition of oat-meal, pea-meal, linseed-meal, wheat flour, mixed with a liberal quantity of salt—this will aid digestion, and abstract fluids from the body. Should the excrements be voided with difficulty or knotty, an injection of soap and water will be advisable. Milk should be given about one quart per day. In case of great prostration, milk should be given with care. The digestive apparatus may be involved in the deterioration of the system, and be unable to digest the fatty constituent, (butter;) hence, in the exhibition of a daily allowance of milk, attention must be paid to the nutritive function, or such a simple article as milk may prove a barrier to affecting a cure. In such a case, to one pint of milk add two ounces of lime water—give twice a day.

For the medical treatment of this disease use phosphate of lime—powdered bloodroot—powdered pleurisy root—powdered Indian turnip—powdered goldenseal, 2 ounces of each—powdered slippery elm, 1 pound—mix, and divide the mass into twenty-four powders; one to be given in the food every night.

STRANGLES OR HORSE DISTEMPER.

This disease is principally incident to young horses—usually appearing between the fourth and fifth year, and oftener in the spring than at any other time—it occasionally attacks old animals. Few horses escape its attack; but, the disease having passed over, the animal is free from it

for the remainder of his life. This disease is usually considered contagious, but we are not clear on this point, but it will be well to separate the patient from healthy animals. This we would recommend in all cases of catarrhal affection.

SYMPTOMS.—It is is generally preceded by cough with a discharge from the nostrils of a yellowish color, mixed with pus, generally without smell, the membrane of the nose intensely red, a swelling under the throat which increases, accompanied by a fever—a disinclination to eat —a considerable thirst, but after a gulp or two the horse ceases to drink. In attempting to swallow, a convulsive cough comes on, which threatens to suffocate the animal, mouth hot; tongue coated with white fur. The tumor under the jaw and about the centre of the channel soon fills the whole space, and is evidently one uniform body, and may thus be distinguished from glanders, or the enlarged glands of catarrh. In a few days it becomes more prominent and soft, and evidently contains a fluid. This rapidly increases; the tumor bursts, and a great quantity of pus is discharged. As soon as the tumor has broken, the cough subsides, and the horse speedily mends, although some degree of weakness may hang about him for considerable time.

TREATMENT.—As soon as the tumor under the jaw is decidedly apparent, the part should be actively blistered. It should be washed off as soon as it rises, and if repeated in a day or two, this will abate the internal inflammation and soreness of the throat aud promote the suppurative process; (when the glands remain hard and do not suppurate, it may lead to glanders, in which case the use of Iodine Ointment as an outward application and hydriodate of potash in daily doses of ten to forty grains, combined with tonics will be found useful as an internal application.)

As soon as the swelling is soft on its summit, and evidently contains matter, it should be freely and deeply lanced, after which apply a linseed poultice. If the incision is deep and large enough, no second collection of

matter will be formed: and that which is already there may be suffered to run out slowly, all pressure with the fingers being avoided. The part should be kept clean. The appetite will return with the opening of the abscess. Bran-mashes, or fresh cut grass should be liberally supplied, which will not only afford sufficient nourishment to recruit the strength of the animal, but keep the bowels gently open. If the weakness is not great, no farther medicine will be wanted, except a dose of mild physic, in order to prevent the swellings or eruptions which sometimes succeed to strangles. In cases of debility, a small quantity of tonic medicine, as camomile, gentian, or ginger may be administered.

No. 2 Homœpathic treatment. Fever symptoms, Aconite, 10 to 15 drops, once an hour, when allayed, arsenicum, 12 to 15 drops.

CUTANEOUS ERUPTION AND ITCHIMG.

Change of diet, will often cure a simple case without any medicin. If it does not yield to this, sponge the animal daily with a weak ley of saleratus water, into which throw a little sulpher; and give a few doses of sulpher and sassafras, equal parts. Dose, one ounce daily. The covering of the body, which may be needed in consequence of sdonging, should be linen, instead of flannel.

BRONCHITIS.

Veterinarians recognize this disease under three aspects, viz:

1. Acute, as when the horse is suddenly attacked with an irritable cough and sore throat; a quick, wiry pulse; membranes of the nose and mouth redder than usual; accelerated respiration; great anxiety of countenance, &c., &c.

2. Chronic bronchitis, which sets in after the acute has subsided; this stage is marked by a discharge of watery and sometimes mucous fluid from the nose; the act of respiration is performed with a sort of wheezing noise, of which they are somewhat relieved in the act of coughing.

3. The third variety has been named *epidemic bronchitis.* This variety is remarkable for the emission of copious discharges from the nose, at one time turning yellow, at another green, and then again white. In this form the disorder is exceedingly apt to assume the chronic type, and, after continuing for a length of time, to leave the animal reduced in flesh, and much debilitated. Heaves may be the result of bronchitis, which leaves the upper air passages in a contracted state, or else thickens their lining membrane. The natural termination of this disease, if unchecked, is in pneumonia.

TREATMENT, in the active stage, may be the same as in pneumonia or drachm doses of powdered lobelia seeds twice a day, with warmth and moisture to the external surface until we know that it has taken effect from the softness of the pulse, by demulcent, such as slippery elm. Counter irritants applied in the vicinity of the throat or chest will afford relief; when a relaxing effect is desired, use one pint of vinegar to 2 ounces of powdered lobelia; let it warm over a slow fire, and apply to the throat two or three times a day; encircle the throat with a piece of soft flannel. Keep the bowels loose by sloppy diet, seasoned with salt. Fine feed scalded and given to the animal while warm, is beneficial, or instead of the above a blister applied over the brisket and sides, and up the trached to the larynx, will afford relief.

CATARRH.

Catarrh frequently arises from exposures, or changes so trifling, that they would not be supposed of the least importance by one unaccustomed to horses. Some suppose that cold and exposure are the sole causes of catarrh; yet it is a well-known fact, that many horses take cold, even though they have not, within several days, some

times weeks, been in a situation where cold could be taken after this fashion; in short, have not left their warm, comfortable stables. But we must remember that a high temperature is just as likely to bring on a cold as any other cause, especially when the subject has been liberally fed; catarrh, in general, oftener arises from heat than cold. But an insalubrious atmosphere may be set down as the chief cause of common colds.

Symptoms.—A discharge from the nostrils, increased redness of the membrane, lining the nostrils; oozing of tears from the corners of the eyes; swellings underneath the jaws; snorting; cough, with or without febrile disorder.

Treatment.—If the patient is in good flesh and the weather is favorable, he may be turned out on green food in the day time, and taken up at night, and a brand mash given. If the weather be cold, let the patient have comfortable quarters, a good bed blanket, legs rubbed and then bandaged with flannel; for diet, scalded shorts. The soreness of the throat may be removed by the following: Olive oil, 8 ounces, oil of cedar, 1 ounce, applied twice a day, a blistering, a fever ball or two, with a drachm of aloes in each, and a little antimony, will generally, set right; keep the rectum open by an injection of warm water and soap; physic should not be given without consideration; blood letting in some cases may be resorted to with success.

NASAL GLEET.

Symptoms.—A discharge of thick, yellow mucus; if at grass, it assumes a green color. At times it becomes purulent, tinged with blood, and if not arrested at this stage, it may end in glanders. The discharge fluctuates with the weather: in dry, it sometimes subsides, and increases in wet and cold weather. If confined to the left nostril, it becomes tenacious, elastic, and accumulates

around the edges of the nasal cavities, and is accompanied by enlargement of the gland, and drooping of the ear, we may be prepared for the worst; for ten chances to one, if it does not terminate in glanders.

TREATMENT.—No 1. Take of alum, one pound, rosin, one half pound, one half blue vitriol, grind and mix with one half of ginger. Give one large spoonful every night and morning

ROARING.

SYMPTOMS.—An unnatural, loud, grunting sound made by the animal in breathing, after a short gallop, produced in the act of inspiration, caused by obstructions in the respiratory canal. Thickening of the membrane sometimes is the result of strangles, chronic cough, catarrh, but more frequently is the result of tight reining, by keeping the windpipe in one position, or in the absorption and paralyzation of the muscles, on one side, which assist in opening and enlarging the entrance to the larynx, by pulling back the arytenoid cartilages, as they are termed. The consequence of this is, that an obstruction takes place; and, although the air can enter with sufficient rapidity when the animal is at rest, yet when respiration is hurried by exertion, a great noise is occasioned by the air passing through the narrow aperture with great rapidity.

TREATMENT.—Remember that, in every chronic case like this, the only hope of success depends on perseverance. Whatever means is adopted, give it a fair trial. Confirmed cases may be incurable. Those of recent date may be cured where the obstruction can be detected. It will be well to bleed, purge, and blister over the affected parts; when the physic acts, commence a course of fever medicine; if no relief is afforded, in two or three weeks, change the treatment. If it arise from atrophy of the muscles, let them be stimulated daily with hartshorn liniment, or some such application, and frequent hard rubbing. If from tumors, let them be removed. If the thyroid glands are enlarged, they should be rubbed daily with stimula-

ting liniment, or ointment of iodine. The horse should at all times have the free use of his head and neck, or the best treatment might fail. Should the cause of roaring evidently exist (below the fauces) either in the bronchii, trachea, or lungs, the operation of trachetomy may be preferred, which consists in making an opening into the trachea, and through it inserting a tube, which may be worn for any length of time, by taking the precaution to cleanse it occasionally. See Tracheotomy.

COMMON COUGH.

Cough is present, and often causes annoyance, in catarrh, laryngitis, bronchitis, strangles, horse ail, &c. Is present also in cases of deranged digestive organs, and when a quantity of worms are present in the digestive organs. A common cough may attend various forms of disease. In cases of a catarrhal character, when a quantity of mucus accumulates in the respiratory passages, the act of coughing ejects it, and thus relieves the animal; therefore, a cough of this kind may be salutary rather than otherwise, and in that event needs no treatment.

A sympathetic cough can only be cured by directing our remedies to the seat of the malady; that cured, the cough ceases.

It does not interfere with the treatment of any disease to use simple remedies to mitigate a cough, if it cause the patient some annoyance; in this view I use powdered slippery elm, Indian turnip, powdered skunk cabbage, caraway seeds, of each 4 ounces. Dose, one half ounce twice a day in gruel.

If the cough continues after the disappearance of pulmonary diseases, dissolve 1 ounce of balsam of fir in 2 ounces of the sweet spirits of nitre, add 4 ounces of the syrup of garlic. Dose, one ounce, night and morning, given in gruel.

CHRONIC COUGH.

Chronic cough is generally caused by long continued or neglected catarrh, or sore throat. 10

THICK WIND.

Thick or broken wind is sometimes connected with worms and glanders. 152

If a harsh hollow cough is accompanied by a staring coat, and the appearance of worms,—a few worm-balls may expel the worms, and remove the irritation of the intestinal canal. If it proceeds from irritability of the air passages, which will be discovered by the horse coughing after drinking, or when he first goes out of the stable in the morning, or by his occasionally snorting out thick mucus from the nose, medicines may be given, and sometimes with advantage, to diminish irritation generally. Small doses of digitalis, emetic tartar, and nitre, administered every night, frequently have a beneficial effect, especially when mixed with tar. These balls should be regularly given for a considerable time. A blister, extending from the root of one ear to that of the other, and reaching six or eight inches down the windpipe, has been tried, and often with good effect, on the supposition that the irritation may exist at the roots of the tongue. Feeding has much influence. Too much dry feed, and especially chaff, increases it. It is aggravated when the horse is suffered to eat his litter. One of the best remedies for an obstinate cough that bids fair to become chronic, is a seton under the throat, which should be kept seven or eight weeks. Carrots afford decided relief.

When chronic cough chiefly occurs after eating, the seat of the disease is evidently in the substance of the lungs. In the violent effort of the lungs to discharge their functions, when laboring under congestion, irritation is produced, and the act of coughing is the consequence.

HEAVES OR BROKEN WIND.

A troublesome cough, and sometimes of long continuance, is the foundation of the disease, or indicates that irritable state of the bronchial membrane with which

broken wind is almost necessarily associated. Horses that are greedy feeders, or devour large quantities of slightly nutritious food, or are worked with a stomach distended by this food, are very subject to broken wind. The agricultural horse is too often fed on the very refuse of the farm, and his hours of feeding, and his hours of work, are frequently irregular. A rapid gallop on a full stomach has often produced broken wind. Flatulence, and a depraved appetite, is the consequence as well as the cause of broken-wind; and there is no pathological fact of more frequent occurrence than the co-existence of indigestion and flatulence with broken wind.

Treatment.—Confirmed cases are incurable, but the disease may in some degree be palliated. We must restore digestion in order to cure indigestion. Attend carefully to the feeding. The food should lie in very small compass, plenty of oats, soaked 4 hours, with one pint of flax seed, and little hay, and this of the best quality; if moistened with fresh chamberley, it improves it. Musty hay should never be given to a horse that has the heaves, and water should be given in moderate quantities. The horse should not be suffered to drink as much as he likes until the day's work is over. Green feed will always be serviceable. Carrots are particularly useful. They are readily digested, and appear to have a peculiarly beneficial effect on the respiratory system. A broken-winded horse should always be watered from a bucket, regularly, three times a day; and if he be a foul feeder, arm him with a muzzle, and only remove it at meal time. We occasionally allow a small quantity of garlic, say a couple of heads every other day, chopped fine, and mixed in the food. One drachm of tincture of aromatic sulphuric acid in a pint of water, night and morning, will be attended with good results. In the mean time we put the

animal on a course of the following alterative medicine Powdered ginger, gentian, sulphur, salt, cream of tartar charcoal, licorice, elecampane, caraway seeds, and balm of Gilead buds, (chopped fine,) equal parts. Dose, one ounce every night in the food.

No. 2. Take the young shoots or buds of white pine, say in May or June, boil them, when the liquor is cold, give the horse one pint a day for 10 days.

No. 3. Take 180 grains of tartar emetic and divide into 3 equal doses, mix in wet brand, give once in two days; this will alleviate.

No. 4. To 20 gallons of water, add one half pint of unslacked lime, give the horse no other drink; to his grain, add 1 gill of vinegar, or one spoonful of ginger; apples are excellent for a horse that has the heaves; good cured corn stalk will generally relieve the disease.

No. 5. Take 1 pint of alcohol and put in all the tar it will cut, give two table spoonsfull, every morning one hour before feeding, for 10 or 11 days.

BLISTERING.

The principle on which they act is, that two intense inflammations cannot exist in neighboring parts, at the same time; they also increase the action of contiguous vessels. Inflammations should be met promptly, with blistering. Old enlargements and swellings can be removed by milder stimulants, such as *sweating down* the part to be blistered. The hair should be shaved, and the ointment thoroughly rubbed in. Care should be taken that the horse cannot hurt himself. After twenty-four hours, a little olive or neat's foot oil should be applied over the blister. Apply the oil, morning and night, until the scab peels off. Where there is a tendency to grease, blistering is dangerous. In the winter, care should be used that the horse does not take cold in the part blistered.

CHAPTER VIII.

DISEASES OF THE URINARY ORGANS, AND DIGESTIVE CAVITY.

INFLAMMATION OF THE KIDNEYS.

Symptoms.—A constant desire to void urine, although only passed in small quantities, highly colored, and sometimes tinged with blood, though more generally quite natural. There is usually a peculiar stiffness in the hind extremities, especially when the horse is made to describe a circle. Pressure on the loins elicit symptoms of pain, and the pulse and respirations denote febrile symptoms.

The Treatment will only vary from that of inflammation of other parts by a consideration of the peculiarity of the organ affected. Bleeding may be promptly resorted to. An active purge should next be administered, and a counter-inflammation excited as nearly as possible to the seat of disease. For this purpose, the loins should be fomented with hot water, or covered with a mustard-poultice — the horse should be warmly clothed; no diuretic should be given internally. One of the best applications to the loins is a fresh sheep skin, the skin side inwards. This will very soon cause and keep up a considerable perspiration, which may be continued by means of a fresh skin in the course of twelve hours. With regard to internal medicines, one of the best sedatives is the white hellebore, in doses of a scruple twice a day. The bowels should be opened by means of an aperient

draught, and abundance of linseed tea should be given, so as to sheath the irritated parts. The patient should be warmly clothed; his legs well bandaged, and plenty of water offered to him. The food should be carefully examined, and anything that could have excited, or that may prolong the irritation, carefully removed.

INFLAMMATION OF THE BLADDER.

This is a very rare but exceedingly dangerous disease. There are two varieties of this disease, inflammation of the body of the bladder, and of its neck. The symptoms are nearly the same with those of inflammation of the kidney, except that there is rarely a total suppression of urine, and there is heat felt in the rectum over the situation of the bladder. The causes are, the presence of some acrid or irritant matter in the urine, or of calculus or stone in the bladder. In inflammation of the neck of the bladder, there is the same frequent voiding of urine in small quantities, generally appearing in an advanced stage of the disease, and often ending in almost total suppression. There is this circumstance which can never be mistaken: the bladder is distended with urine, and can be distinctly felt under the rectum. It is spasm of the part, closing the neck of the bladder so powerfully that the contraction of the bladder and the pressure of the muscles are unable to force out the urine.

THE TREATMENT in this case will be the same as in inflammation of the kidneys, except that it is of more consequence that the animal should drink freely of water or thin gruel.

The irritation being great, it is almost impossible to keep any soothing application in the bladder, the contents of which are being continually ejected. Recourse, therefore, must be had to very copious bleeding, so as to endeavor to check the inflammation which exists, as well as to assuage the irritation, which forbids local measures. It will assist, to administer calomel, combined with opium and tartarized antimony, two scruples of each being given three times a day. The same means may be

adopted when inflammation attacks the neck of the bladder, and the spasm prevents its evacuation. The bladder of a mare may be readily evacuated by means of a catheter; and, by the aid of the elastic and flexible catheter, the bladder of the gelding can also be discharged, though the operation requires some tact and skill.

INFLAMMATION OF THE STOMACH AND BOWELS.

There are two varieties of this malady. The first is inflammation of the external coats of the intestines, called *peritonitis* accompanied by considerable fever, and usually costiveness. The second is that of the internal or mucous coat, called *enteritis.*

The muscular coat is that which is oftenest affected. Inflammation of the external coats of the stomach, whether the peritoneal or muscular, or both, is a very frequent and fatal disease. It speedily runs its course, and it is of great consequence that its early symptoms should be known.

The causes of *peritonitis* are both numerous and various. We have seen that colic may give rise to it. Constipation may be viewed in the light, both of cause and effect, in its relation to it. Collected hardened fæces must naturally not only of themselves be irritative, but obstructive and subversive of the functions of the bowels, and in either one or the other way may lay the foundation for an attack of inflammation. Certain kinds of indigestible food, calculous bodies, irritating matter of any sort, within the bowels, may cause an inflammation of them. Obstruction of any of their passages—whether it be from the lodgment and immovableness of the matters they contain, or from entanglement of the intestines, or intus-susception—must in the end occasion inflammation. Over-fatigue, and consequent excessive irritation in the bowels, will bring it on.

Symptoms.—There is some analogy between the symptoms of this disease and colic; there is, however, one marked feature of the case which enables us to diagnose

the disease with some degree of certainty, for when inflammation has fairly set in, there is little, if any, remission of pain; whereas, in colic, the pains are of a spasmodic character, so that the animal at times is quite easy. The pulse, in inflammation of the bowels, is small, firm, and quick increasing in beat as the disease increases in intensity.

"The next stage borders on delirium. The eye acquires a wild, haggard, unnatural stare—the pupil dilates—his heedless and dreadful throes render approach to him quite perilous. He is an object not only of compassion but of apprehension, and seems fast hurrying to his end; when, all at once, in the midst of agonizing torments, he stands quiet, as though every pain had left him, and he were going to recover. His breathing becomes tranquilized—his pulse sunk beyond all perception—his body bedewed with a cold, clammy sweat—he is in a tremor from head to foot, and about the legs and ears has even a death-like feel. The mouth feels deadly chill; the lips drop pendulous; and the eye seems unconscious of objects. In fine, death, not recovery, is at hand. Mortification has seized the inflamed bowel—pain can no longer be felt in that which, a few minutes ago, was the seat of exquisite suffering. He again becomes convulsed, and in a few more struggles, less violent than the former, he expires.

TREATMENT.—The treatment should be prompt and energetic. The first and most powerful means of cure will be bleeding. From six to eight quarts of blood should be abstracted as soon as possible; and the bleeding repeated, if the pain is not relieved and the pulse has not become rounder and fuller. Weakness is the consequence of violent inflammation of these parts; and if that inflammation is subdued by the loss of blood, the weakness will disappear. The bleeding should be effected on the first appearance of the disease.

A strong solution of aloes should immediately follow the bleeding, but guarded by opium. This should be quickly followed by back-raking, and injections consisting of warm water, or very thin gruel, in which Epsom salts

or aloes have been dissolved; and too much fluid can scarcely be thrown up. If the common ox-bladder and pipe is used, it should be frequently replenished. The horse should likewise be encouraged to drink plentifully of warm water or thin gruel; and draughts, each containing a couple of drachms of dissolved aloes, with a little opium, should be given every six hours, until the bowels are freely opened.

Dr. Dadd recommends a method of treatment quite different from the above. He is very much opposed to blood-letting in all cases. That bleeding is efficacious in this and other diseases, is certain, but we are not certain that the same results cannot be attained by other and milder remedies. There has been a reform, of late years, in the human practice with good results, and why cannot the same ends be accomplished in the veterinary practice? We would recommend a careful perusal of Dr. Dadd, in "Modern Horse Doctor," on this disease.

BOTS.

This disease is frequently confounded with cholic, or other diseases. Generally speaking, bots are not so troublesome to horses as people seem to suppose; for it is very rare, in making a post mortem examination, that we do not find more or less in the stomach. This history is curious and is as follows:

A species of gad-fly is in the latter part of the summer exceedingly busy about the horse. It is observed to be darting with great rapidity towards the knees and sides of the animal. The females are depositing their eggs on the hair, and which adhere to it by means of a glutinous fluid with which they are surrounded. In a few days the eggs are ready to be hatched, and the slightest application of warmth and moisture will liberate the little animals which they contain. The horse in licking himself touches the egg; it bursts, and a small worm escapes,

which adheres to the tongue, and is conveyed with the food into the stomach. There it clings to the cuticular portion of the stomach, by means of a hook on either side of its mouth; and its hold is so firm and so obstinate, that it most be broken before it can be detached. It remains there feeding on the mucus of the stomach during the whole of the winter, and until the end of the ensuing spring; when, having attained a considerable size, and being destined to undergo a certain transformation, it disengages itself from the cuticular coat, is carried into the villous portion of the stomach with the food, passes out of it with the chyme, and is evacuated with the dung.

TREATMENT.—In most cases, if the horse be allowed to run for a short time at grass, when the bots have attained their full growth, and exercise an independent life, they will pass off with the excrement. The compound for the expulsion of the bots will be found useful, when they are found at neck of the throat:

No. 2. Drench freely with sweet milk and molasses, (sugar or honey will do,) well shaken together. Continue it, a bottle full every fifteen or twenty minutes, according to the severity of the attack, until the animal becomes easy; then give a quart bottle full of strong salt and water, followed soon after with a quart bottle of Castor Oil. It is worse than idle to give anything with the view of killing the bots in a horse. The only plan is to coax them off.

No. 3. Make a tea of sage, sweeten it well, when about milk warm drench your horse with it. If it turns out to be colic and not bots, the sage will be good for that.

No. 4. As soon as it is discovered that a horse has symptoms of bots, give a half pint of warm, sweet milk, just drawn from a cow, and a half pint of molasses. In 15 minutes after, give a strong tea made of elder bark, and sage, to which add a half an ounce of alum. This is given as a drench. In half an hour after, give the horse a portion of physic.

We have but little faith in medicine expelling bots; we can get the medicine into the horse's stomach, but we cannot get it down the throat of the worm when the food does not suit him.

The nit or egg can easily be got rid of by greasing the horse's hair, and then rubbing it with a coarse cloth, or by applying warm water, which loosens their hold on the hair.

COLIC.

In nine cases out of ten, colic is the result of impaired digestive organs. The drinking of cold water when the horse is heated, is a very sure origin of violent spasm in the horse. Hard water is very apt to produce this effect. Colic will sometimes follow the exposure of a horse to the cold air or a cold wind, after strong exercise. Green feed, although, generally speaking, most beneficial to the horse, yet, given in too large a quantity, or when he is hot, will frequently produce gripes. Doses of aloes, both large and small, are not unfrequent causes of colic.

SYMPTOMS.—It is of much importance to distinguish between spasmodic colic and inflammation of the bowels, for the symptoms have considerable resemblance, although the mode of treatment should be very different.

The attack of colic is usually very sudden. The horse begins to shift his posture, look around at his flanks, paw violently, strike his belly with his feet, and crouch in a peculiar manner, advancing his hind limbs under him; he will then suddenly lie, or rather fall down, and balance himself upon his back, with his feet resting on his belly. The pain now seems to cease for a little while, and he gets up, and shakes himself, and begins to feed; the respite, however, is but short—the spasm returns more violently—every indication of pain is increased—he heaves at the flanks, breaks out into a profuse perspiration, and throws

himself more recklessly about. In the space of an hour or two, either the spasms begin to relax, and the remissions are of longer duration, or the torture is augmented at every paroxysm; the intervals of ease are fewer and less marked, and inflammation and death supervene. The pulse is but little affected at the commencement, but it soon becomes frequent and contracted, and at length is scarcely perceptable.

TREATMENT.—Take powdered grains of paradise, 1 tea-spoonful; powdered caraway, 1-2 tea-spoonful; oil of peppermint, 20 drops; powdered slippery elm, 1 table-spoonful; hot water, 1 pint; mixed together and given from a bottle. An injection of common soap suds thrown into the rectum. Peppermint tea alone will sometimes afford relief and a perfect cure. Saleratus is a favorite remedy with many, but it should not be mixed with milk or molasses, as is often done.

If the animal labors under pyloric obstruction, the following is a good preparation: — Carbonate ammonia, 1 drachm; tincture of ginger, 1 ounce; water, 1 pint. Mix, and drench the horse.

SCOURS AND CONSTIPATION IN YOUNG COLTS.

The principal cause of this disease is the want of proper management of the mother. It is a law of nature that whatever effects the bowels of the mother, will also effect the colt through the milk it derives, though more seriously. For the colt must now, and, until it be able to masticate food, depend altogether on the parent's milk, and the latter cannot furnish it in sufficient quantities, unless kept on generous food.

TREATMENT.—Our first duty is to attend to the wants of the mother—establish her health if it be impaired.

Stock raisers might learn a lesson from nurses who attend human parturients; they give the old-fashioned dose

of castor oil understandingly, knowing from long experience that it operates both on the mother and child.

The milk of the mother, immediately after parturition, is the best kind of medicine to regulate the secretions and excretions of the offspring, and it generally has the desired effect. There may, however, be cases where, in consequence of exposure, the foal may have diarrhœa; if so, he must be placed in a warm situation. Perhaps all that will now be needed for the cure is some warm ginger, or caraway tea; and a little of either of these simple articles, pulverized, may, with advantage, be given to the mother in her food. If the mother is fat, and has not had sufficient exercise previous to parturition, we are not to be in a hurry to stop the discharge, but merely to hold it in check. If, in poor condition, and still losing flesh, then, in addition, give of tonic, and give freely of gruel made of wheat flour, and as long, the foal should not depend altogether on its dam for sustenance, but might have a daily allowance of boiled cow's milk, cooled to about the temperature of milk when drawn. Hay tea, to which a small quantity of cow's milk may be added, is an excellent drink for the young foal in the absence of its mother's milk. Try it, reader, on your calves, also, if you have occasion.

The following astringent drink for colts is efficacious, viz: Angelica root, one ounce; Cranesbill, 2 ounces; bayberry bark, 1-4 ounce; African ginger, 1-2 ounce. Pour on the above ingredients two quarts of boiling water; set them aside for a few hours. Dose—Half a pint every four hours until the disease is checked. If the discharges are fetid, add to each dose half a table-spoonful of finely-pulverized charcoal, and if the foal be weak and in poor condition, allow it hay tea, thickened with oatmeal.

As regards costiveness, green food and scalded shorts are the *antidotes*, and the mother will partake of either with relish; some of the former, if the season permits, should be cut and placed before her soon after labor. If the articles fail to have the desired effect, a dose of aperient medicine—castor oil, or salts—should be given.

DIARRHŒA.

This is quite a common disease among horses. There is a kind, however, among grass eaters, that is beneficial rather than otherwise, if it does not continue for any length of time. Diarrhœa is the effect of an irritable or congested state of the mucous membrane of the intestines, often produced by improper articles, or over doses of physic, by over exertion and perspiration, suddenly checked by exposure to cold winds, &c.

SYMPTOMS.—The symptoms are, he frequently looks round at his flanks; his breathing is laborious, and the pulse is quick and small—the mouth is hot and the legs and ears are warm.

TREATMENT.—If it proceeds from the feed, change of diet will generally be sufficient. Unless the purging is excessive, and the pain and distress great, the surgeon should hesitate at giving any astringent medicine at first; but administer gruel or thin starch, or arrow-root, by the mouth and by clyster, removing all hay and corn, and particularly green feed. If, however, twelve hours have passed, and the purging and the pain are undiminished, continue the gruel, adding to it chalk, catechu, and opium, repeated every six hours. As soon as the purging begins to subside the astringent medicine should be lessened in quantity, and gradually discontinued. The horse should be warmly clothed, and placed in a comfortable stable, and his legs should be hand-rubbed and bandaged. Bayberry bark and charcoal are powerful astringents.

If the disease depends on deranged digestive function, the liver included, give a few doses of the following: Powdered goldenseal, 2 ounces; powdered ginger, 1 ounce; salt, 1 ounce. Dose, half an ounce twice a day.

INDIGESTION.

The causes of indigestion are numerous: too little or too much of food, water, or work; bad ventilation; exposure; poisons; damaged or highly nutritious food; working the animal on a full stomach—are all operative in producing indigestion in acute or chronic forms.

SYMPTOMS.—The excrement is very variable in color and consistence, often hard and covered with slime; at other times soft, when the presence of intestinal parasites can be detected. The urine is scanty, and either colored or thickened with foreign material. The animal is generally cross and irritable, and leaves the stable, at working time, very unwillingly; he requires considerable urging while travelling, and, of course, is incapacitated to perform his usual work.

TREATMENT.—First, if possible, remove the cause. If the animal has been fed on dry food, let him have a mixture of boiled oats, shorts, and carrots, well seasoned with salt, to which add daily half a table-spoonful of white mustard seed; $\frac{1}{4}$ pint of pale brandy to four ounces of fine salt; dose, a wine glass, in oatmeal gruel, night and morning, just before meals. The animal must not be permitted to spend half his time eating. Attention must also be paid to the water which the animal drinks: throw a handful of pulverized charcoal, daily, into the water trough. This will improve the very worst kind.

INFLAMMATION OF THE EYE.

This disease is so familiar to every one, that a description of it seems unnecessary. Its seat is in the membrane which lines the inside of the eyelids and covers the white of the eye; when treated in the early stage, it generally yields to very simple treatment. From this primary form of disease others of a more alarming nature supervene.

As prevention is much cheaper than cure, it is of great importance to practice that system of management, with respect to feeding, exercise, cleanliness and ventilation, which is most likely to prevent it. It may be considered under two forms—the common and manageable, and the specific and fatal. The common inflammation is generally sudden in its attack.

SYMPTOMS.—The lids will be found swelled and the eyes partially closed, and some weeping. The inside of the lid will be red, some red streaks visible on the white

of the eye, and the cornea slightly dim. This is occasionally connected with some degree of catarrh or cold; but it is as often unaccompanied by this, and depends on external irritation, as a blow, or the presence of a bit of hay-seed or oat-husk within the lid, towards the outer corner where the haw cannot reach it; therefore the lids should always be carefully examined as to this possible source of the complaint.

TREATMENT.—Cooling applications to the eye, as the eye lotion or tincture of opium, with gentle physic, will usually abate the evil; or the inflammation will subside without medical treatment. A cool shed, rather darkened, will be the most desirable place; a very light diet of scalded shorts, or gruel, will be all the patient needs, for inflammation.

LOCKED JAWED OR TETANUS.

Locked jaw or tetanus is one of the most dreadful and fatal diseases to which the horse is subject. It is called locked jaw, because the muscles of the jaw are earliest affected, and the mouth is obstinately and immovably closed. It is a constant spasm of all the voluntary muscles, and particularly of the neck, the spine, and the head. It is generally slow and treacherous in its attack. The horse, for a day or two, does not appear to be quite well; he does not feed as usual; he partly chews his food, and drops it; and he gulps his water. The owner at length finds that the motion of the jaws is considerably limited, and some saliva is driveling from the mouth. If he tries, he can only open the mouth a very little way, or the jaws are perfectly and rigidly closed.

Tetanus most usually occurs from injuries to some nervous fibre of the foot—sometimes from a prick in shoeing. It is also connected with docking, nicking and castration, over exertion, and sudden exposure.

SYMPTOMS.—A protrusion of the muzzle, and stiffness of the neck; the muscles singularly prominent, distinct, hard, knotty, and unyielding. There is difficulty in bringing the head round, and still greater difficulty in bending it. The eye is drawn deep within the socket.

The ears are erect, pointed forward, and immovable; if the horse is spoken to, or threatened to be struck, they change not their position. The nostril is expanded to the utmost. The respiration is usually accelerated, yet not always so; but it is uniformly laborious. The pulse gives little indication of the severity of the disease. It is sometimes scarcely affected. After a while, however, the heart begins to sympathize with the general excitation of the system, and the pulse increases in frequency and force until the animal becomes debilitated, when it beats yet quicker and quicker, but diminishes in power, and gradually flutters and dies away.

The countenance is eager, anxious, haggard, and tells plainly enough what the animal suffers.

The stiffness gradually extends to the back. If the horse is in a narrow stall, it is impossible to turn him; and, even with room and scope enough, he turns altogether like a deal-board.

The extremities begin to participate in the spasm—hinder ones generally first. The horse stands with his hindlegs straddling apart in a singular way. The fore-limbs have a singular appearance; they are as stiff as they can possibly be, but stretched forward and straddling.

There is a degree of "hide-bound" appearance, and of tucking up of the belly, which is seen under no other complaint. The tail becomes in constant motion.

Constipation, and to an almost insurmountable degree, now appears. The abdominal muscles are so powerfully contracted, that no portion of the contents of the abdomen can pass on and be discharged.

By degrees the spasm extends and becomes everywhere more violent. The motion of the whole frame is lost, and the horse stands fixed in the unnatural posture which he has assumed. The countenance becomes wilder and more haggard—its expression can never be affaced from the memory of him who cares about the feelings of a brute.

Treatment.—The object is to abate the spasm. For this purpose, opium will be the most efficient remedy. It will be borne in doses of from half a drachm to two drachms

every four or five hours. Large injections of Epsom or Glauber salts in solution may be used to advantage. The horse should be well rubbed and blanketed, and a strong liniment rubbed along the spine.

If the disease terminates fatally, it is usually from the sixth to the eighth day. There are occasionally slight remissions in the spasm, but not sufficiently to enable the animal to eat or to drink. If these remissions return and increase in length, and particularly if there is more relaxation of the lower jaw, there is yet hope. If the horse recovers, it will be slowly, and he will be left sadly weak, and a mere walking skeleton.

FEVER.

Fever is general increased arterial action, either without any local affection, or in consequence of the sympathy of the system with inflammation in some particular part.

The first is *pure fever.* Owing to bad stable management and general treatment, and the susceptibility of various parts of the horse to take on inflammation, this usually degenerates into inflammation. But pure fever is sometimes seen, and runs its course regularly.

It frequently begins with a cold and shivering fit, although this is not essential to fever. The horse is dull, unwilling to move, has a staring coat, and cold legs and feet. This is succeeded by warmth of the body; unequal distribution of warmth to the legs; one hot, and the other three cold, or one or more unnaturally warm, and the others unusually cold, but not the deathlike coldness of inflammation of the lungs; the pulse quick, soft, and often indistinct; the breathing somewhat laborious; but no cough or pawing, or looking at the flanks. The animal will scarcely eat, and is very costive. While the state of pure fever lasts, the shivering fit returns at nearly the same hour every day, and is succeeded by the warm one, and that often by a slight degree of perspiration; and these alternate during several days until local

inflammation appears, or the fever gradually subsides. No horse ever died of pure fever. If he is not destroyed by inflammation of the lungs, or feet, or bowels, succeeding to the fever, he gradually recovers.

Fever is general increased action of the heart and arteries, and therefore evidently appears the necessity for bleeding, regulating the quantity of blood by the degree of fever, and usually keeping the finger on the artery until some evident and considerable impression is made upon the system. The bowels should be gently opened; but the danger of inflammation of the lungs, and the uniformly injurious consequence of purgation in that disease, will prevent the administration of an active purgative. A small quantity of aloes may be given, morning and night, with the proper fever medicine, until the bowels are slightly relaxed, after which nothing more of an aperient quality should be administered. Digitalis, emetic tartar, and nitre should be given morning and night, in proportions regulated by the circumstances of the case. The horse should be warmly clothed, and placed in a cool and well-ventilated stable.

PUTRID FEVER.

The cause of this disease may be attributed to the atmospheric influence and debility, however induced.

SYMPTOMS.—Great debility, difficulty in swallowing, and thirsty, pulse weak, gets down and is not able to rise, lies on his side paws, not able to rise, rattles in the windpipe.

TREATMENT.—In attacks where the prostration of strength is not great, give a drachm of camphor, and half an ounce of nitre, pulverized and dissolved in half a pint of warm water; and give as a drench every two hours two doses; then omit one dose, and give half an ounce of capsicum, pulverised and dissolved in a pint of warm water; in six hours after, commence with the camphor and nitre as before, and give it every six hours, till it has considerable of a diuretic effect, or till the horse shows symp-

toms of returning health, when three doses in twenty-four hours will be sufficient. But if the horse should be losing strength, the nitre must be left out, and from two to four drachms of capsicum added to the camphor in its place, and give every four or six hours.

If still losing strength, he must have added to them night and morning, from three to four drachms of finely powdered cascarilla. Injections must be used twice a day whilst the bowels are costive, composed of half an ounce of castile soap, to a quart of water, and four ounces of epsom salts dissolved in a quart of warm water, alternately. The throat gargled every two hours, with a tea made by pouring half a gallon of boiling water on six drachms of capsicum, and when cool, add a pint of good vinegar. The throat externally must be well rubbed with the following mixture, three or four times a day: half a pint spirits of hartshorn, ditto of turpentine, ditto of camphor, all mixed and kept well corked. If the horse is down and unable to get up, he must be helped

WARTS.

These excrescences, arising from the cuticular covering of the skin, are sometimes very annoying to horses, especially when occurring about the eye, sheath, penis, or on parts which come in contact with the harness.

Treatment.—A wart having a broad base should be treated in the following manner: Take a common suture needle, and arm it with a double ligature; each ligature is to be composed of three threads of saddler's twine, well waxed; pass the needle through the centre of the wart, close down to the skin; tie each half separately; with a *surgeon's knot*, as tight as possible; cut the end off pretty close to the knot, and in the course of a short time the whole will drop off. A wart having a small circumscribed pedicle may be removed in the same way, by tying a *sin*

gle ligature round its base. If the exposed surface should not heal readily, moisten them occasionally with tincture of aloes and myrrh; and if they show a disposition to ulcerate, sprinkle them with powdered charcoal and blood-root, equal parts. Warts about the sheath or penis should be removed by incision: to do this, we often have to cast the animal, the consequent hemorage to be arrested with tincture of muriate of iron, or styptic.

CRACKED HEELS.

This is a very common affection in the country, and is often attended with lameness. If long neglected, an offensive discharge sets up, the skin becomes tender, the limb temefied, the animal loses his appetite and fails in flesh. Cracked heels may be treated on the same principle as scratches. To releave pain, apply a tent moistened witl sulphuric ether.

SLOBBERING.

This complaint is quite common in rural districts, where clover is used as a pasture. Lobelia or tobacco will produce the same results. This is caused by irritation, the article coming in direct contact with highly sensitive secretary surfaces, which always pour out their fluids on the application of an irritant, so long as it remains an irritant, and provided the parts retain their normal sensibility, or through the medium of absorbents; thus, calomel will cause the salivatory gland to secrete and pour forth an amount of fluid almost incredible. A horse will secrete more than one and a half gallons of fluid per hour. The sharp edges of a worn-down tooth, or a tooth in a state of ulceration, may give rise to profuse salivation; then again, a rough bit, and a hard master may be set down among the direct causes of this complaint. Indifferent fodder of any kind and impaired digestive organs, are apt to produce augmented salivary secretion.

TREATMENT.—The causes should be sought for, and if practicable, removed. This may, of itself, produce relief.

If the trouble can be traced to a carous tooth, let it be extracted, or should the edges of a tooth irritate the inside of the cheek, apply the tooth rasp, and make all smooth. If any irritation exists about the glands of the throat ar' mouth, apply a stimulating application to them, composed of hartshorn and olive oil. If something noxious in the food, give the following:

Powdered bayberry bark, powdered myrrh, powdered goldenseal, powdered ginger, powdered sulphur, of each 1 ounce. Mix; divide the mass into eight parts, and mix one in fine feed, gargles, composed of decoction of witch hasel, bayberry bark, tincture gum catechu, and a solution of alum, either of which is good, when an astringent is indicated.

No. 2. Mix a table spoonful of sulphur in salt, give once or twice a week.

No. 3. Burdock leaves are said to effect a cure. Horses will not eat them only when they are troubled with slobbers, and thus eradicate two evils at one time.

SPAVIN.

This is a very common and formidable disease of the hock, and we have but little to offer by way of cure, and the majority of cases may be pronounced incurable; the lameness may be in part or entirely cured, but the spavin cannot be radically removed. The principal cause of the disease may be found in breeding from old b roken down spavin mares and worthless studs, but the exciting or immediate cause, is strain, injury, over-work, &c.

The weight and concussion being thrown principally on the inner splent-bone, produce inflammation of the cartilagenous substance that unites it to the shank-bone. In consequence of it, the cartilage is absorbed, and bone deposited; the union between the splent bone and the shank becomes bony, instead of cartilagenous; the degree of elastic action between them is destroyed, and there is formed a splent of the hind leg. The disposition to form bony matter having commenced, bone continues to be deposited, and it generally appears in the form of

a tumor, where the head of the splent-bone is united with the shank, and in front of that union. This is called bone spavin. Inflammation of the ligaments of any of the small bones of the hock, proceeding to bony tumor, would equally class under the name of spavin; but commonly, the disease commences on the precise spot that has been described.

SYMPTOMS.—While spavin is forming there is generally lameness and sometimes very great but not entirely to unfit him for work; the lameness sometimes abates and entirely disappears, by a little exercise, but when the membrane of the bone has accommodated itself to the tumor that extended it, lameness subsides or disappears, or depends upon the degree which the bony deposit interfered with the motion of the joint. Sometimes there is no tumor; then if a sort of regular lameness has existed for some months, referable to no other joint than the hock, and the difficulty has of late gradually increased, so that the joint appears stiff, the critter is there, after which we may expect to observe a tumor on the inside of the hock. A tumor once formed in the region already referred to needs no *wise man* to point it out; it can be both seen and felt; and this, accompanied with hock lameness and ligamentary tumefaction, is the symptom of spavin in its *exostotic* stage.

TREATMENT.—The remedy in the early stage, cold water and refrigerated lotions; in the latter stages, strong infusion of bayberry bark; and lastly, brandy and salt, perseveringly applied. Congestion may be treated in the same manner, aided by friction.

The horse, as soon as the lameness or dry signs of disease are perceptible, should have rest, and cooling applications should be applied. Dr. Dadd says: Our usual remedy in the early stage is muriatic acid, 4 ounces, water, 2 quarts, tincture of bloodroot, 6 ounces. Applied daily by means of a sponge, as follows: Take a piece of sponge,

slightly concave, corresponding as nearly as possible to the form and size of the hock; by means of a few stitches, affix two pieces of tape or linen, so as to form an X; each piece must be long enough to encircle the joint two or three times; after dipping the sponge in the mixture, it must be applied to the inside of the hock, and there secured, and afterwards kept constantly moist. Dr. Spooner says: If any external inflammation is present, we cannot do better than commence by abstracting blood from the vein above, and use cooling applications to the hock; after which we may resort to the blister, or seton.

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 the use of which is to facilitate motion. Counter irritants, bandage, friction, and regular exercise are good remedys.

Or drive a piece of leather, about two by six inches, full of tacks one fourth of an inch apart, fasten this to a piece of wood, place the points of the tacks against the wingall, give it two or three taps, then sponge out the fluid. Bandage it with linen, and saturate it with camphor twice a day. 174

RINGBONE.

Ringbone is a deposit of bony matter in one of the pasterns, and usually near the joint. It rapidly spreads, and involves not only the pastern bones, but the cartilages of the foot, and spreading around the pasterns and cartilages, thus derives its name. Ringbone is sometimes hereditary; though it is usually occasioned by a strain taken in curvetting, bounding turns, and violent galloping or racing. A coarse or half-bred, fleshy, or bony-legged horse, with short and upright pasterns is the ordinary subject of this disease.

The treatment will be similar to spavin, in reality there is no cure, but the lameness may be in a great measure removed by cooling applications, cold water bandage, liniments, and above all, give the horse rest.

Prof. Spooner says: The best treatment for ringbones after the inflammation has been in great measure removed

by cooling applications, is to well rub in the iodine of mercury ointment, washing off the effects on the following day, and thus repeating it again and again. We have by such means succeeded in removing the lameness, diminishing the enlargement, and restoring the animal, in many cases, to a state of usefulness.

FOUNDER OR ACUTE RHEUMATISM.

This is a very common disease among horses. Founder is produced by driving a horse, when in a state of perspiration, into a pond, exposing him to cold wind or rain, or tying him up in the stable yard while the hostler washes his legs or thighs, and sometimes his body; but excessive exertion alone will, and often does, produce every kind of founder.

SYMPTOMS.—The earliest symptoms of fever in the feet are fidgetyness, frequent shifting of the fore-legs. The pulse is quickened, the flanks heaving, the nostrils red, and the horse, by his anxious countenance, and possibly moaning, indicates great pain. He looks about as if preparing to lie down; he continues to shift his weight from foot to foot; he is afraid to draw his feet sufficiently under him for the purpose of lying down; but at length he drops. His quietness when down will distinguish it from colic or inflammation of the bowels, in both of which the horse is up and down, and frequently rolling and kicking when down. When the grievance is in the feet, the horse experiences so much relief, from getting rid of the weight, that he is glad to lie as long as he can. He will likewise, as clearly as in inflammation of the lungs or bowels, point out the seat of disease, by looking at the part. His muzzle will often rest on the feet or the affected foot.

The feet will be found hot, the patient will express pain if they are slightly rapped with a hammer, and the artery at the pastern will throb violently. If the disease is suffered to pursue its course, he will be perfectly unable to rise; or, if he is forced to get up, and one foot is lifted, he will stand with difficulty on the others, or perhaps drop at once, from intensity of pain.

TREATMENT.—Youatt says, bleeding is indispensable. If the disease is confined to the fore-feet, four quarts of blood should be taken as soon as possible from the toe of each; care being taken to open the artery as well as the vein. The feet may likewise be put into warm water, to quicken the flow of the blood, and increase the quantity abstracted. Poultices of linseed meal, made very soft, should cover the whole of the foot and pastern, and be frequently renewed. The shoe should be removed, the sole pared as thin as possible, and the crust, and particularly the quarters, well rasped. This must be done gently, and with a great deal of patience. Sedative and cooling medicines should be diligently administered, consisting of digitalis, nitre, and emetic tartar. About the third day a blister may be tried, taking in the whole of the pastern and the coronet, and washed off the following day, and repeated several times. The horse should be kept on mash diet, unless green meat can be procured; and that should not be given too liberally. Linseed tea, and water acidulated with cream of tartar, form the best drink for patients. When the season will permit, two months' run at grass will be serviceable.

CHRONIC FOUNDER.

The principal difference between this and the acute disease lies in the less activity of the attack and inflammatory fever, and the indefinite duration of the symptoms; the lameness is not persistent, but goes off after exercise, and returns again while the animal is at rest.

The treatment should be similar to that recommended for the acute disease—blood-letting, poultices, fomentations, and blisters, and the last much sooner and much more frequently than in the former disease.

CRAMP.

This is a sudden, involuntary, and painful spasm of a particular muscle. It occasionally attacks the muscles of organic life, but in its most common form only affects the hind extremities, where it is observed by the temporary lameness and stiffness it produces, in the hardly worked

horse, as he is first led out of the stable in the morning. If any lameness remains, which can be ascertained by pressing the parts, it should be removed by hard rubbing, or by giving the horse a wider or more comfortable stall, if that should appear to be the origin of the difficulty.

SPLENT.

This is a callous or osseous tumor—growing upon one, or contiguous to one, of the splent bones.

A splent seldom occasions lameness, except in the primary stage. When the membrane has accommodated itself to the tumor, the lameness subsides, and altogether disappears, unless the splent be in a situation in which it interferes with the action of some tendon or ligament, or in the immediate neighborhood of a joint.

TREATMENT.—The hair should be closely shaved off round the tumor; a little strong mercurial ointment rubbed in for two days; and this followed by an active blister. If the splent is of recent formation, it will generally yield to this, or to a second blister.

LAMENESS.

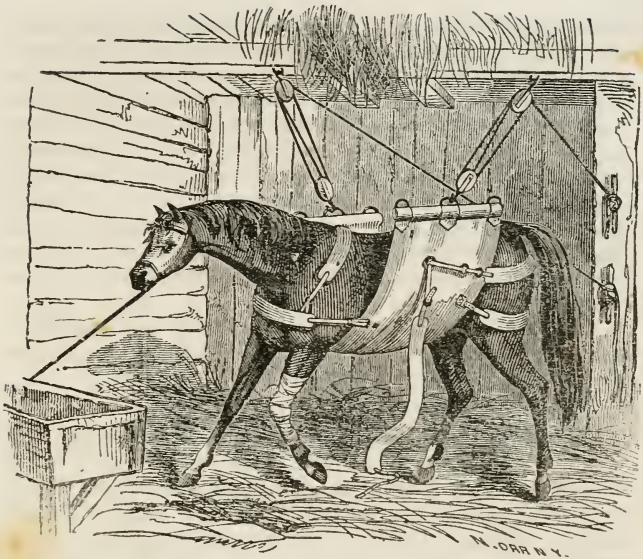
Lameness of whatever kind should have prompt attention. However trivial it may appear, it may end in a chronic lameness and perhaps in spavin or ringbone. If the cause is not clear to the owner, he had better consult one that is skilled, though it may cost a little trouble and money. There are various causes and kinds of lameness. It frequently arises from shoeing, or by picking up some foreign bodies. Removing the cause, will generally be sufficient to effect a cure, but if the incision is deep, dress with fir balsam, or mixed soap and sugar. In stifle joint lameness, the symptoms are heat and tenderness, and the limb is advanced with difficulty; rest, fomentations with infusion of poppy heads, cold water, and sometimes physic, will be the most proper means of cure. For chronic stifle lameness, originating in adhesions, or infiltrations of the surrounding tissues, a few applications of the acetate of cantharides will probably effect a cure. Lameness in the hock, from strain, over-work, or blow, is evi-

dent from the heat, pain, and tumefaction about the part · the animal will flinch when the part is handled, and sometimes *catch the leg up*. The parts should be kept cool by sponge, and the horse should have rest. If he is worked, a it may prove a spavin. In lameness of the shoulder, the symptoms are, the horse moves the leg in a circular form instead of advances forward, and the action of one shoulder is quite different from the other; the animal throws the weight of the body as much on the sound side as possible.

TREATMENT.—If caused by heavy drawing, violent tugging, or galloping on roads, rest, fomentations, and a light dose of medicine are indicated. Should the animal still be lame after the inflammatory symptoms, have subsided, use the following liniment: Linseed oil, one pint, chloric ether, 1 ounce, oil of cedar, half an ounce. Mix; and apply to the shoulder, night and morning. If the disease is confined to the joint, blister, or stimulating liniments may answer.

ELBOW JOINT LAMENESS.

The symptoms are tenderness, pain, swelling, heat, and tumefaction around the joint, with inability of free motion, &c. A dose of cathartic medicine, if high heat prevails in the surface of the lame region,—vinegar and water—are indicated. Very little benefit can be derived from any treatment, unless the animal be kept at rest, and on a light diet. In the greater number of cases of fracture, it will be necessary to place the horse under considerable restraint, or even to suspend or sling him. A broad piece of sail-cloth, furnished with two breechings, and two breast-girths, is placed under the animal's belly, and, by means of ropes and pulleys attached to a cross beam above, he is elevated or lowered as circumstances may require. It will seldom be necessary to lift the patient quite off the ground, and the horse will be quietest, and most at his ease, when his feet are suffered just to touch it. The head is confined by two collar ropes, and the head-stall well padded. Many horses may plunge about and be difficult to manage at first, but generally



speaking, it is not long ere they become perfectly passive.

The use of the different buckles and straps which are attached to the sail-cloth will be evident on inspection. If the horse exhibits more than usual uneasiness, other ropes may be attached to the corners of the sail-cloth. This will afford considerable relief to the patient, as well as add to the security of the bandages.

TOE CRACK.

The practice is first, to poultice the foot, (supposing the shoe to have been removed,) with a view of softening the hoof and removing any extraneous matter that may have insinuated itself into the crack. When the hoof is sufficiently softened, it should be cleansed, examined, and dressed with tincture of myrrh. Select a spot about an inch below the coronet, and with a small gimlet bore a hole through the two edges of the crack, and an-

other one inch above the toe. A straight needle, armed with a strong ligature, is to be passed through the upper holes, brought over and through a second time; thus closing the two edges of the fissure by what the sailors term a "round turn." The same thing is to be repeated at the toe. The assistant, by the aid of pincers or otherwise, shuts the crack as close as possible; the ligatures are each drawn tight, and tied with a surgeon's knot. A small quantity of blister ointment is to be smeared over the crack, and bar shoe applied. A quarter crack may be treated in a similar manner, omitting, however, the *sutures.*

After the edges have firmly united, cut the ligatures, and pare the uneven edges of the *cicatrix* level with the surrounding parts, and the cure is completed.

SWELLED LEGS.

If it occurs in young horses, and from those that are over-fed and little exercised, sometimes diuretics or purgatives, with proper management, will afford relief, if there is a great degree of stiffness and pain, somtimes abscesses appear. Physic or diuretics, or both, must be had recourse to, if not connected with diseases and general debility. Mingle cordial with diuretics. Hay bandages dipped in water have a good effect for the agricultural horse.

SCRATCHES.

Swelled legs, although distinct from grease, is a disease that is apt to degenerate into it. Scratches is a specific inflammation of the skin and heels, sometimes of the fore-feet, but oftener of the hinder ones. The principal cause of the disease is, neglected grooming and care, want of exercise, high feeding, washing the feet and leaving them to dry. The prevention will be proper ventilation, good stabling, grooming, and proper care. It is more likely to affect horses with white feet than others. Some consider the disease contagious.

SYMPTOMS.—The first is heat and tenderness. On applying the hand to the heel and fetlock, the parts will be found hot, and under pressure, the animal will evince

signs of pain. As the disease progresses, the parts become swollen,—infiltrated with serum,—thus increasing the inflammatory symptoms, and causing the animal much pain, which he usually evinces by occasionally *catching up the foot;* the hairs stand out horizontally. When the disease attacks both hind legs, the pain is sometimes intense, especially if the horse be plethoric, or his system is charged with morbid humors. In the latter case, the greasy discharge is very profuse; for the pent-up waste matters have now found an outlet, which admit of a free discharge of the fluids of the body.

TREATMENT.—Attention must first be paid to diet, ventilation and cleanliness. The heels should be gently washed with castile soap and water, and ointment applied in more advanced cases. Poultice with linseed meal or carrots, boiled and mashed, may be applied, adding a little astringent lotions to renew the irritation, and check the discharge—give the cleansing powder. The following will also be found beneficial which has been highly recommended, by Prof. Norton, and others: Pyroligneous acid, linseed oil, turpentine, of each equal parts. Mix; first wash with water and castile soap; after wiping them dry, apply the mixture. Repeat night and morning. In order to keep down "proud flesh," the parts may be sprinkled daily with burnt alum. Put on a good coating; cover the sore with dry lint, and apply a bandage over all. Bandages should always be dispensed with, if possible.

POULTRY LOUSINESS.

Horses frequently become infected with *lice* from poultry, having the roosting place adjoining the stalls. When this is discovered, the preventive will be to remove the roosting place, and scald and whitewash the stable.

SYMPTOM.—The horse is seized with violent itching, shows a disposition to rub and bite himself, strike his belly, is not easy for a moment, at night his torment increases, after this his skin loosens, his hair and main sometimes break out with eruptions.

TREATMENT.—In order to destroy the vermin, and at

the same time to cure the cutaneous eruptions, and restore the hair, take linseed oil, one ounce, pyroligneous acid, 3 ounces, spirits of turpentine, 1 ounce. Two or three applications of this compound will generally suffice. The parts to which the application has been made must be washed with soap and water. The vermin can also be destroyed by sponging the body with an infusion of lobelia.

HIDE BOUND.

This term is applied to horses whose coat are *staring*, and skin tight on the ribs and otherwise out of condition. It is not so much of a disease as a symptom of a disease, particularly of the digestive organs. Every disease that can effect the general system may produce this. Glanders, scratches, chronic cough, farcy founder, are accompanied by hide bound. Diet too sparing, or want of change in diet, is an unfailing source of it; if the cause is removed, the effect will follow.

TREATMENT.—If no disease appears about the horse, change the diet, clothe the body warmly, give a few mashes, and a mild physic, or give alteratives, and there is none better than that which is in common use, pulverized antimony, nitre and sulphur. Should the horse not feed well, and there is no fever, a slight tonic may be given of ginger. Friction may be used to advantage.

GLANDERS.

This is the most formidable of all the diseases to which the horse is subject. This disease is spontanous with the horse only. In other animals, it is the result of contagion. In the horse, it is the result of injuries of some kind, acting upon and weakening the vital energies of the lining membrane of the nose. It is often the consequence of catarrh, influenza, distemper, and long-continued discharge from the nose.

They have been produced by the injection of stimulating and acrid substance up the nostril. No disease will run on to glanders which has not, to a considerable and perceptible degree, impaired and broken down the constitu

tion; and every disease that does this will run on to glanders.

Glanders are highly contagious. If the discharge from the nostrils of a glandered horse is rubbed on a wound, or on a mucus surface, like the nostrils, it will produce a similar disease.

If some persons underrate the danger, it is because the disease may remain unrecognized in the infected horse for some months, or even years, and therefore, when it appears, it is attributed to other causes. No glandered horse should be employed on any farm, nor should a glandered horse be permitted to work on any road, or even to pasture on any field. He should be destroyed.

It is capable of being communicated to the human being, and, indeed, there have been very many deaths from this cause, and most horrible deaths they are. It is generally by means of some cut or abrasion, which comes in contact with the glandered matter, that the infection is communicated. The utmost caution should, therefore, be exercised by the attendants.

The stall and fences may receive the glanderous matter; and hardening on them, it may months afterwards communicate the disease to horses, sheep and cattle.

The earliest symptom of glanders is an increased discharge from the nostril, small in quantity, constantly flowing, of a watery character, and a little mucus mingling with it.

It is a common and very mischievous error to suppose that this discharge is sticky, when it first makes its appearance. It is mucus, but small and constant discharge, and is thus distinguished from catarrh, or nasal gleet, or any other discharge from the nostril.

The peculiar stickiness and gluiness supposed to distinguish the discharge of glanders from all other mucus and prevaleut secretions belongs to the second stage of the disease, and, for many months before this, glanders may have existed in an insidious and highly contagious form. It must be acknowledged, however, that, in the majority of cases, some degree of stickiness does charac-

terize the discharge of glanders from a very early period.

It is a singular circumstance, that when one nostril alone is attacked, it is, in a great majority of cases, the left.

This discharge may continue in so slight a degree as to be scarcely perceptible, for many months, or even two or three years, unattended by any other disease, even ulceration of the nostril, and yet the horse being decidedly glandered from the beginning, and capable of propagating the malady. In process of time, however, it mingles with the discharge, and then another and a characteristic symptom appears. Some of this is absorbed, and the neighboring glands become affected. If there is discharge from both nostrils, the glands within the under jaw will be on both sides enlarged. If the discharge is from one nostril only, the swelled gland will be found on that side alone. Glanders, however, will frequently exist at an early stage, without these swelled glands, and some other diseases, as catarrh, will produce them. Then we must look out for some peculiarity about these glands, and we shall readily find it. The swelling may be at first somewhat large and diffused, but the surrounding enlargement soon goes off, and one or two small, distinct glands remain; and they are not in the centre of the channel, but adhere closely to the jaw on the affected side.

The membrane of the nose should now be examined, and will materially guide our opinion. It will either be of a dark purplish hue, or almost of a leaden color, or of any shade between the two; or if there is some redness of inflammation, it will have a purple tinge. Spots of ulceration will probably appear on the membrane cover the cartilage of the nose—small ulcers, usually approaching to a circular form, deep, and with the edges abrupt and prominent. When these appearances are observed, there can be no doubt about the matter.

When ulcers begin to appear on the membrane of the nose, the constitution of the horse is soon evidently affected. The patient loses flesh—his belly is tucked up, his coat unthrifty, and readily coming off—the appetite

is impaired—the strength fails—cough, more or less urgent, may be heard—the discharge from the nose will increase in quantity; it will be discolored, bloody, offensive to the smell—the ulcers in the nose will become larger and more numerous, and the air-passages being obstructed, a grating, choking noise will be heard at every act of breathing. There is now a peculiar tenderness about the forehead. Farcy is now superadded to glanders, or glanders has degenerated into farcy, and more of the absorbents are involved.

At or before this time little tumors appear about the muscles, and face, and neck, following the course of the veins and the absorbents, for they run side by side; and these tumors soon ulcerate. Tumors or buds, still pursuing the path of the absorbents, soon appear on the inside of the thighs. They are connected together by a corded substance, and ulceration quickly follows the appearance of these buds. The deeper seated absorbents are next affected; and one or both of the hind-legs swell to a great size, and become stiff, and hot, and tender. The loss of flesh and strength is more marked every day. The membrane of the nose becomes of a dirty livid color. The membrane of the mouth is strangely pallid. The eye is infiltrated with a yellow fluid; and the discharge from the nose becomes more profuse, and insufferably offensive. The animal presents one mass of putrefaction, and at last dies, exhausted.

TREATMENT.—In well settled cases of this disease and farcy, it is not worth while to attempt any remedies. The chances of cure are too remote, and the danger of infection too great. The horse should be dispatched at once.

If, however, remedial measures are resorted to, a pure atmosphere should be tried; and if practicable, keep on green food. If this cannot be had, substitute it by boiled carrots, beets, and turnips, thickened with shorts or fine feed. Give all the salt the horse will eat. See receipts.

FARCY.

Authorities define *farcy* to be a disease of the lym-

phatic vessels, making its appearance in the form of circular swellings, termed *farcy buds*, which terminate in a discharge and ulceration.

The causes of farcy exist in any thing that deranges the lymphatic system; and probably the same causes that operate, either by contagion or otherwise, to produce glanders, will produce farcy. "By inoculation, farcy has been produced by the matter of glanders, and glanders by the matter of farcy; and, consequently, there is every reason to infer a similarity, or rather an identity, in the virus of the two diseases; one disease, or form of disease, almost invariably terminates in the other, prior to dissolution. There can be no question but that the same contaminated atmosphere of the stable or elsewhere, which produces glanders, may occasion farcy, and *vice versa*."

Symptoms.—The horse is not in his usual spirits, appears dull and does not partake of food with his accustomed relish. Some horse's pulse will be quicker than natural, mouth hot, urine high-colored, &c.; others are suddenly attacked with a swollen leg. So sudden, sharp, and severe are attacks of farcy in some instances, that in the course of one night, the horse's limb will be swollen to a frightful size, so as to incapacitate him almost from turning in his stall and walking out of the stable.

"Viewing the affected limb from behind, we perceive a fulness on the inside of the thigh, along the course of the femoral vein; and the application of our finger to this will immediately detect a corded, nodous swelling, which has been happily enough, in the sensation it conveys to our feel, compared to a '*cord with so many knots tied in it.*' This is at once evidence of the presence of farcy.

"Tracing the cord upward from its place of origin, which commonly is above the hock, the hand is carried into the groin, and there discovers a lobulated tumor, a swelling of the inguinal glands, called a *bubo;* sometimes, however, the bubo does not make its appearance until after the full developement of the cord."

The first stage of farcy is tumification of the lymphatics—"development of the farcy bud."

The second stage is commonly a suppurative one, terminating in a farcy ulcer. After passing through these two stages, the disease may, and frequently does, terminate in glanders. When it attacks horses in good condition, some hopes may be entertained of a cure. "No swelling of a hind limb (or any other part) constitutes a case of farcy apart from the unequivocal signs of *lymphatic* disease; there must be present corded, nodulated swellings,—*buds* in some form or other,—together with actual or approaching tumefacation of the lymphatic glands, or the case is not farcy."

POLL EVIL AND FISTULA WITHERS.

Poll evil generally makes its appearance about the nape of the neck in the form of a swelling, and if not arrested, ends in abscess and fistula. It generally proceeds from blows and bruises, striking the poll against the ceiling or beams, jerking the head upwards, and coming in contact with the head-stalls. Excessive friction, the bungling and cruel manner of putting on small collars, &c., are the principal causes of this complaint. It results either from neglect or abuse.

Poll evil is first noticed in the form of an oval tumor, hot and tender, situated directly in the region of the nape, mostly inclining to one side; in the suppurative stage, and when the matter is deep-seated, scarcely any fluctuation can be felt; when, however, the matter lies directly beneath the skin, or in the cellular tissues, the reverse is the case. The suppurative finally runs into the ulcerative stage; we then observe chasms and sinuses, similar to those observed in fistula of the withers, and finally the bones become involved in the disease.

Fistula of the withers does not differ from poll evil except in location, but is more frequent. It arises in consequence of the withers being more exposed to injury. Fistula is the more formidable; for the sinuses often burrow deep between the shoulder blade and spinous processes, in various directions, so that it becomes both difficult and dangerous to search for them. For the treatment of fistula and poll evil, see receipts.

A LIST OF THE MEDICINES AND RECIPES USED IN THE TREATMENT OF THE DISEASES OF THE HORSE.

VINEGAR is a very useful application for sprains and bruises. Equal parts of boiling water and cold vinegar will form a good fomentation.

SPIRIT OF SALT.—This acid is formed by the action of sulphuric acid on common salt. It is decidedly the best liquid caustic we have. For corns, canker, indisposition in the sole to secrete good horn, wounds in the foot not attended by healthy action.

NITRIC ACID.—This is a valuable external application. It is both a caustic and an anti-septic. It destroys fungous excrescences.

SULPHURIC ACID, OR OIL OF VITRIOL.—When mixed with tar, an ounce to the pound, it is a good application for the thrush and canker: a smaller quantity, mixed with olive oil, makes a good stimulating liniment.

ALOES.—There are two kinds used in horse practice, the Barbadoes and the Cape. The Barbadoes aloes have a greater purgative power than the Cape, exclusive of griping less and being safer, and the action of the bowels is kept up longer.

ALUM,—is used internally in cases of over-purging, in the form of alum-whey, two drachms of the powder being added to a pint of hot milk. Its principal use is external. A solution of two drachms to a pint of water forms alone, or with the addition of a small quantity of white vitriol, a very useful wash for cracked heels, and for grease generally; and also for those forms of swelled legs attended with exudation of moisture through the skin.

ANODYNES.—Opium is the only drug that will lull pain. It may be given as an anodyne, but it will also be an astringent in doses of 1, 2, or 3 drachms.

CAMPHOR.—It diminishes the frequency of the pulse, and softens its tone. When long exhibited, it acts on the kidneys. Externally applied, it is said to be a discutient and an anodyne for chronic sprains, bruises and tumors.

SPANISH FLIES,—are the basis of the most approved and useful veterinary blisters. An infusion of two ounces of the flies in a pint of oil of turpentine, for several days, is occasionally used as a liquid blister; and, when sufficiently lowered with common oil, it is called a sweating oil. They have been recommended for the cure of glanders. The dose is from five to eight grains given daily, but withheld for a day or two when diuresis supervenes.

GUINEA PEPPER.—They are valuable as stimulants. Their beneficial effect in cases of cold has seldom been properly estimated. The dose is from a scruple to half a drachm.

CARAWAY SEEDS.—These and ginger, alone or combined, are the best stimulants used in horse practice.

CASTOR OIL —is an expensive medicine. It must be given in large doses.

JAPAN EARTH—is a very useful astringent. It is given in over-purging, in doses of one or two drachms, with opium.

CHARCOAL—is occasionally used

as an antiseptic, being made into a poultice with linseed meal, and applied to foul and offensive ulcers, and to cracked heels.

VERDIGRIS is usefully applied externally as a mild caustic. Either alone, in the form of fine powder, or mixed with an equal quantity of the sugar of lead, it eats down proud flesh, or stimulates old ulcers to healthy action. When boiled with honey and vinegar, it constitutes the farrier's Egyptiacum, certainly of benefit in cankered or ulcerated mouth, and no bad application for thrushes.

BLUE VITRIOL.—It is a favorite tonic with many practitioners. It is principally valuable as an external application, dissolved in water in the proportion of two drachms to a pint, and acting as a gentle stimulant. If an ounce is dissolved in the same quantity of water, it becomes a mild caustic. In the former proportion, it rouses old ulcers to a healthy action, and disposes even recent wounds to heal more quickly than they otherwise would do; and in the latter it removes fungous granulations or proud flesh. It is also a good application for canker in the foot.

CREOSOTE—is much valued on account of its antiseptic properties and stopping hemorrhages. It is both a stimulant and a tonic. In an undiluted state, it acts as a caustic. In the form of a lotion, a liniment, or an ointment, it has been useful in farcy and glanders, also in foot-rot, canker and thrush. As a caustic, it acts as a powerful stimulant.

DIGITALIS — FOX-GLOVE. — The leaves of the common fox-glove, gathered about the flowering time, dried carefully in a dark place, and powdered, and kept in a close black bottle, form one of the most valuable medicines in veterinary practice. It is a direct and powerful sedative, diminishing the frequency of the pulse, and the general irritability of the system, and acting also as a mild diuretic: it is, therefore, useful in every inflammatory and febrile complaint, and particularly in inflammation of the chest. It is usually given in combination with emetic tartar and nitre. The average dose is one drachm of digitalis, one and a half of emetic tartar, and three of nitre, repeated twice or thrice in a day.

DIURETICS—constitute a useful class of medicines. They stimulate the kidneys to secrete more than the usual quantity of urine, or to separate a greater than ordinary proportion of the watery parts of the blood.

In swelled legs, cracks, grease, or accumulation of fluid in any part, and in those superficial eruptions and inflammations which are said to be produced by humors floating in the blood, diuretics are evidently beneficial; but they should be as mild as possible, and not oftener given or continued longer than the case requires.

GENTIAN stands at the head of the vegetable tonics, and is a stomachic, as well as a tonic.—Four drachms of gentian, two of chamomile, one of carbonate of iron, and one of ginger, will make an excellent tonic ball. An infusion of gentian is one of the best applications to putrid ulcers.

GINGER—is as valuable as a cordial, as gentian is as a tonic. It is the basis of the cordial ball, and it is indispensable in the tonic ball.

HELEBORE, *black*.—This is used mostly as a local application, and as such it is a very powerful stimulant.

INJECTIONS.—See CLYSTERS.

IODINE.—This is one of the most valuable drugs used in the veterinary practice. It is used in reducing every species of tumors. It is used in various forms. Iodine of potassium is best administered internally, as a promoter of absorption. Combined with the sulphate of copper, it forms a powerful and useful tonic; whilst in the form of iodine of mercury, and combined with lard or palm oil, it becomes a powerful blister, and a useful promoter of absorption.

CHLORIDE OF LIME is exceedingly valuable. Diluted with twenty times its quantity of water, it helps to form the poultice applied to offensive discharges.—The fœtid smell of fistulous withers, poll-evil, canker, and ill-conditioned wounds, is immediately removed, and the ulcers are more disposed to heal.

LINSEED is often used instead of water, for the drink of the horse with sore throat or catarrh, or disease of the urinary organs, or of the bowels.

MASHES,—constitute a very important part of horse-provender, whether in sickness or health.

MUSTARD SINAPIS.—This will be found useful, if, in inflammation of the chest or bowels, it is well rubbed on the chest or abdomen.

NITROUS ETHER, SPIRIT OF,— is a very useful medicine in the advanced stages of fever.

OPIUM,—However underrated by some, is a valuable drug; but it is a powerful antispasmodic, sedative and astringent.

PALM OIL,—is the very best substance that can be used for making masses and balls.

PITCH.—The best plaster for sand-crack consists of one pound of pitch and an ounce of yellow beeswax melted together.

NITRATE OF POTASH (*Nitre*) is a valuable cooling medicine and a mild diuretic, and therefore it should enter into the composition of every fever-ball. Dose is from two to four drachms.

POULTICES.—Few horsemen are aware of the value of these simple applications in abating inflammation, relieving pain, cleansing wounds, and disposing them to to heal. Linseed meal forms the best general poultice, because it longest retains the moisture.

SEDATIVES,—are medicines that subdue irritation, repress spasmodic action, or deaden pain.—Digitalis, hellebore, opium, turpentine, are medicines of this kind.

SUGAR OF LEAD, — See under LEAD .

SULPHUR.—It is an excellent alterative, combined usually with antimony and nitre, and particularly for mange, surfeit, grease, hide-bound, or want of condition; and it is a useful ingredient in the cough and fever ball.

TAR,—melted with an equal quantity of grease, forms a good stopping of the farrier. But its principal virtue seems to consist in preventing the penetration of dirt and water to the wounded

part; and is used with the usual cough medicine, and in doses of two or three drachms for chronic cough.

TURPENTINE—is one of the best diuretics, in doses of half an ounce, and made into a ball with linseed meal and powdered ginger. The oil of turpentine is an excellent antispasmodic. For the removal of colic, it stands unrivalled.

ZINC—*Calamine Powder.*—Five parts of lard and one of resin are melted together, and when these begin to get cool, two parts of the calamine, reduced to an impalpable powder, are stirred in. If the wound is not healthy, a small quantity of common turpentine may be added. This salve justly deserves the name which it has gained, "The Healing Ointment." The calamine is sometimes sprinkled with advantage on cracked heels and superficial sores.

RECEIPTS.

WONDERFUL LINIMENT.—2 ounces oil of spike, 2 do organum, 2 do hemlock, 2 do wormwood, 4 do sweet oil, 2 do spts. ammonia, 2 do gum camphor, 2 do spts. turpentine, and one quart of proof spts. 95 per cent, mix well together, and bottle tight.

For sprains, bruises, lameness, &c., &c., the above liniment cannot be equalled, and is actually worth $100 to any person keeping valuable horses. Omit the turpentine and you have the best liniment ever made for human ails, such as rheumatism, sprains; and whenever an outward application is required, try it and prove its virtues. It acts like magic.

RHEUMATIC LINIMENT. — Take alcohol ½ pt., oil of origanum ½ oz., cayenne ½ oz., gum myrrh ½ oz., 1 tea spoonful lobelia., and let all stand one day, then bathe the part affected. I paid $5 for this recipe.

RELIEF LINIMENT.—Take ½ pt. linseed oil, add ½ pt. spts. turpentine, 1 ounce origanum, and one ounce oil of vitriol; an excellent liniment for rheumatism, sprains, bruises, &c., try and prove it.

CHLOROFORM LINIMENT.—For relieving suffering in case of burns, &c., mix chloroform and cod-liver oil.

SOAP LINIMENT.—Take 1 oz. organum, 1 oz. casteel soap, 1 pt. alcohol, for swellings, &c.

GENERAL LINIMENT. — Turpentine one-half pint, linseed oil one half pint, aquamonia 4 oz., tr. of iodine 1—shake it all well. This is used for different things spoken of in the different receipts, sores or swellings, sprains, &c.

BLACK LINIMENT.—This is good to apply on poll evil—fistula.—Take of linseed oil half pint, tr. of iodine 3 oz., turpentine 4 oz., oil of origanum 1 oz.—shake all well and apply it every day.—Rub it in well with your hand—wash the part clean with soap and water before applying it.—This is good on any swelling.

JOHNSTON'S LINIMENT—Take oil of origanum one oz., alcohol one half-pint, oil of cedar one half-ounce, oil of cloves one half-ounce, turpentine one half-ounce, olive oil 8 oz.—shake all well. This is used for almost all complaints of the muscles.

OPODELDOC.—Take alcohol half a gallon, 2 pounds of castile soap, 4 oz. gum camphor, 2 oz. oil of ambre; place the alcohol into a pot in hot water, shave up the soap and keep it hot until all dissolves, and you have the old original opodeldoc.

GREEN OINTMENT.—Take 6 lbs. lard, put into ten gallon kettle, add 2 gallons of water, cut jimpson weeds, and fill them in and cook them four to six hours, slow, and cook all the water out, then put into jars, add to each pound of ointment one ounce of turpentine. This is a good and cheap stable ointment—good for galls, cuts, scratches, &c.

SLOAN'S OINTMENT—Take mutton tallow 4 lbs., beeswax one half pound, rosin one half pound, turpentine 3 oz.,—melt over a slow fire, and, when partly cold, add the turpentine, and you have the same ointment. Sloan sells to cure everything; try it and prove its value.

IODINE OINTMENT.—Get 1 oz. of the grease iodine, 1 pint of alcohol, let this stand in the sun two days, and this is the tincture of iodine. Take 2 oz. of tincture and one-half pound of lard; mix well, and you have the iodine ointment.—This is used wherever the receipts refer to the ointment.

WHITE OINTMENT.—For rheumatism, sprains, burns, swellings, bruises, or any inflammation on man or beast, chapped hands or lips, black eyes, or any kind of bruise. Take fresh butter 2 lbs., tr. of iodine half oz., oil of origanum 2 oz—mix this well for fifteen minutes and it is fit for use—apply it every night; rub it in well with your hand. If for human flesh, lay on warm flannel.

BLUE OINTMENT.—Take the ointment of rosin 4 oz., half oz. of finely ground verdigris, 2 oz. of turpentine, mutton tallow 2 lbs., half oz. oil of origanum, half oz. tr. of iodine—mix all well.—This is one of the best medicines that can be made, for scratches, hoof-evil, cuts, and is good to apply on fistula, after the rowels have been taken out.

HOOF OINTMENT.—Take rosin 4 oz., beeswax 6 oz., lard 2 lbs.; melt together, pour it into a pot, and 3 oz. of turpentine, 2 oz,; of finely powdered verdigris 1 lb tallow—stir all until it gets cool. This is one of the best medicines for the hoof ever used. It is good for corks or bruises of the feet.

HOOF LIQUID.—For tender feet, hoof-bound, &c. Linseed or neats foot oil, half a pint of either, turpentine 4 oz., oil of tar 6 oz., origanum 3 oz., shake this well and apply it as the directions for the ointment. This is the best, if the horse has been lame long—it penetrates the hoof sooner than the ointment—both of them should be applied at night.

HOOF EVIL, OR THRUSH; GREASE HEELS.—Bleed, and physic, and poultice the foot with boiled turnips and some fine ground charcoal—this must be done at night, for two or three nights, then wash the foot clean with castile soap and soft water, and apply the blue ointment every day—keep the horse on a floor floor, and he will be well in twelve days.

HOOF-BOUND OR TENDER FEET—Never have the feet spread at

the heels nor rasped above the nail holes, for it will do the foot an injury. Follow the directions given here. Use either the hoof ointment or the hoof liquid; apply it according to directions.—For hoof bound or tender feet, apply it all around the top of the hoof down one inch every third day. If for split hoof, apply it every day. First, have a stiff shoe on the foot, and cleanse the cut or crack. Never cut or burn for it.

HOOF AIL.—Apply blue vitriol and put on a tarred rag to keep out the dirt.

No. 2. Wash well with warm soap suds—wipe dry with a cloth, then take two spoonfuls of common table salt, two spoonfuls of copperas, pulverize, four spoonfuls of soft soap, mix well; spread it upon a thick cloth, apply to the foot, then confine it with a bandage. Let it remain twelve hours, then wash as before.

HOOF-BOUND.—Pare the heel of the hoof till it is as flat and natural as a colt's; then take equal parts pitch pine and butter simmered together and annoint the heel.

HEAVES.—Take 1 lb. of rosin, 1 lb. of salt-petre, 8 oz., alum, 1 oz. of asafatidy, 4 oz. of snlpher, pulverised and mixed, give one teaspoon full once a day in his feed. This is also a good medicin for puting a horse in condition.

PREPERATION FOR GELDING HORSES.—Take 2 oz. corrosive suplimate, 1 oz. gum kino, 1 oz. red porsipitate.

SPRAIN IN THE STIFLE.—Symptoms—the horse holds up his foot, moans when moved, swells in the stifle. This is what is called stifling. There is no such thing as this joint getting out of place.

Cure—Bleed two gallons, foment the stifle with hot water, rub it dry, then bathe it well with the general liniment every morning and night; give him a mash and he will be well. Never allow any stifl-eshoe or cord on the foot or leg.

HOW TO CURE CORNS.—Take off the shoe, cut out the corns and drop in a few drops of muriatic acid, then make the shoes so as they will not bear on the part affected. Apply the hoof liquid to the hoof to remove the fever. This is a sure treatment. I never knew it to fail.

CORNS.—Take the shoe off and give the horse a free run at grass for a few weeks. This will frequently cure.

FOUNDER IN THE FIRST STAGES.—Bleed from the neck vein 2 or 3 gallons, or until he falls, then give the following: Half oz. of aloes, 4 drachms gamboge, half oz. of 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 48 hours.

No 2. Physic, and poultice the feet.

No 3. Mix one pint of sunflower seed in his food.

SPAVIN OR RING-BONE.—Take 1 pt., of spts, turpentine 1 pt., of oil spike, 4 oz. of salt-petre, 4 oz. of alum, 2 oz, oil viturel. Bath the part affected thoroughly every other day for one week, and if this does not effect a cure continue it longer. This has cured

spavins of nine years standing. This receipt has been used with great success.

SPAVIN AND RING-BONE MEDICINE.—Take of cantharides 2 oz., mercurial ointment 4 oz., tr. of iodine 3 oz., turpentine 4 oz., corrosive sublimate 3 drachms—mix all well with 2 pounds of lard—color it if you like. Follow the directions here given.

If for ring-bone 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 windgals, or bog-spavin, or curb, apply the ointment every six days, This recipe has been sold for $300.

SPAVIN.—Camphor dissolved in spts. of turpentine, applied until the hair starts.

No. 2. Oil vitriol, origanum, cedar oil, Spanish flies, equal parts; 3 oz. turpentine.

TO CURE RING-BONE WHEN FIRST COMING.—Dissolve one quarter-pound of salt-petre in one quart of soft water, and wash with it twice a day. This will stop the growth and lameness, and not remove the hair.

RING-BONE.—Take of spts. of turpentine, oil of spike, of each 1 ounce; bottle and mix well; then add 1 ounce of oil vitriol, bath the diseased part well for three days, and drive it in by the application of a hot iron; then suspend it for three days, to prevent the part becoming too sore; then apply the remedy again. The sore should be created with lard, or ointment; this will cure the disease if not of too long standing.

POLL EVIL.—Cure 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 following lotion. Take of salamoniac 2 oz., and turpentine spirits half pint, 4 oz. linseed oil, and 4 oz. of spirits of tar; shake all well, and apply it all over the swelling every other day; let the seton stay in until all the swelling is gone down—move it every day, and when all is gone draw it out. Bleed when you first open it; keep the part clean.

POLL EVIL AFTER IT BREAKS.—If you find by probing it that the pipes run down towards the surface, run down a seton through the bottom of the pipe, and anoint it with the following ointment. Take of mercurial ointment 4 oz., and of cantharides half an ounce; anoint the seton every day until it runs a bloody matter, then, draw it out, if the pipes run down to the centre of the shoulders; then run down a piece of the nitre of silver to the bottom, and use the liquid in the next following receipt; apply it on the sore every day; keep the part clean with soap and water.

LIQUID FOR POLL EVIL.—Take olive oil 6 ounces, turpentine half oz., oil of origanum half oz., American or seneka oil 3 oz.—Mix well and apply it to the part affected, after the nitre of silver has been used. Apply this every few days, until it heals up. The cleaner you keep the part the better.

POLL EVIL AND FISTULA.—Clean the sore throughout with soap-suds; sound the pipe or pipes find their direction and depth

then take stiff paper, roll it in a horn shape about the size of a goose quil; fill with arsenic or potash; double over the ends; insert the pipe and push or drive it to the bottom, Serve all the pipes in the same manner, it will break loose in 3 to 6 weeks. Cleanse it one day with soap suds, and next with a wash composed of one teaspoonful of white vitriol, and 1 do. burnt copperas, one do. burnt alum, one of gunpowder, in one pint of rain water. Oil the sore well after washing.

FISTULA.—Take one pint of alcohol, ½ pt. turpentine, 1 oz. indigo, apply once a day.

TO DRIVE OFF POLL EVIL BEFORE IT BREAKS.—Take 4 oz. oil of spike, 1 of British oil, one-eighth of white vitriol, 1 of extract of mullen hearts; apply twice a day. Shake well before you apply. Give the cleansing-powder to cleanse the blood.

THRUSH R SPAVIN.—Take 2 oz. oil of St. John, 1 oz. of oil of viterol, 1 oz. oil turpentine, 3 oz. of whiskey. For spavin or ringbone add 2 oz. of mercurial ointment, This is a valuable receipt.

CONDITION POWDERS.—Take 2 lb. of rosin, 1 lb. ginger, 1 lb. cassar, ½ lb. salt-petra, pulverise fine and mix togetner. Give one table-spoon full every other day.

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—this is dropsy.

TOO FREE DISCHARGE OF URINE. Give one half oz. of the tr. of 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.

DISEASE OF THE LIVER, OR YELLOW WATER.—Give the following ball every morning until it operates upon the bowels. Take 7 drachms of aloes, and 1 drachm of calomel, 4 drachms of ginger, and molasses enough to make it into a ball, wrap it in paper and give it; give scalded bran and oats, grass if it can be got; when his bowels have moved, stop the physic, and give 1 oz. spirits of camphor in a half pint of water every morning for twelve days; rowel in the breast, and give a few doses of cleansing powder.—Turn him out.

FRESH WOUNDS.—First, stop the wound by tying the arteries, or by applying the following wash: 4 gr. of nitre of silver, 1 oz. of soft water, wet the wound with this and then draw the edges together by stitches one inch apart, then wash clean, and if any swelling in twenty-four hours, bleed, and apply the blue ointment, or any of the liniments spoken of. Keep the bowels open.

BRUISES.—Take Arnica blossoms steeped in whiskey.

CURE FOR BILES ON HORSES.—Permit the patient to have a run for 5 or 6 weeks in a good pasture, and give a little physic in shorts or meal.

CURE FOR CRAMP.—Give a dose of cathartic medicines and hot fomentations to the limbs, and a little rest.

BALLS FOR WORMS.—Barnadoes Aloes 6 dra., powdered ginger 1½ oz., oil of wormwood 20 drops, powdered natron, 2 dra.; molasses to form a ball.

BALL FOR HIDE BOUND.—Barnadoes Aloes, 1 oz, castile soap, 9 dra., ginger 6 dra.

PHYSIC-BALL.—One half ounce of aloes, 3 drachms of gamboge, 20 drops of the oil of juniper; make it into a pill with a few drops of molasses; wrap it up in thin paper and grease it; draw out the tongue with the left hand; place the gag in the mouth, and run the pill back with the right hand until it drops off, let the head down and give a sup of of water. First, prepare the horse by giving one or two mashes.

LIQUID BLISTERER.—Take alcohol 1 pint, turpentine one half-pint, aquamonia 4 oz., oil of origanum 1 oz.; apply this as spoken of every three hours until it blisters. Do not repeat oftener than once in eight days, or seven at least, or it will kill the hair.

HEALING OINTMENT.—Take five parts of lard, one of rosin, melt together; when they begin to get cool add two parts of calomine powder, If the wound is unhealthy add a little turpentine.

GALLS ON HORSES.—Bath the parts affected with spirits saturated with alum.

GRUBS IN HORSES.—Take a tea spoonful of red precipitate, form into a ball, repeat, if necessary, in 30 minutes.

WORMS.—Give one quart of strong tea made of worm-wood at night, the next day give7 drachms of aloes, 2 drachms of calomel, make it into a ball and give it; give no cold water for 48 hours; make it milk-warm; give him 2 or 3 bran mashes, and some of the cleansing-powder; if he shows any more symptoms, repeat the dose in three weeks. This will never fail.

WARTS.—Cut them out by the roots—take the tenackulum or hook, run it through the warts, and draw and cut round it, and draw it out; if it should bleed too much, take 5 grains of nitre of silver, and 1 oz. of water; wet a sponge, and merely touch the part with this wash, and it will stop them; treat it as any fresh wound—still, every time you wash it, scratch the scab off, so the scar will be small. This is the only sure way to treat them.

GROGGY KNEES.—This can be cured in the first stages, but if of long standing, there is no cure. Have shoes made thick at the toe and thin at the heels; take linseed oil, half pint, alcohol 4 oz., 1 oz. camphor spirits, 2 oz. laudanum—shake and apply to back part of legs, rub it in well every 4 days; still increase the thickness of the shoes at the toe.

SORE MOUTH OR TONGUE.—Take of borax 3 drachms, and 2 drachms of sugar of lead, half oz. of alum, one pint of sage tea—shake all well together, and wash the mouth out every morning. Give no hay for twelve days.

CLEANSING POWDER—This is to be used when the blood is out of order—good to restore lost appetite—yellow water; and wherever it is to be used, it is spoken of. Take 1 pound of good ginger, 4 oz. powdered gentian, 1 oz. nitre, half oz. crude antimony—mix all well. Give one large spoonful every day, in wet food. This is perfectly safe.

SICK STOMACH.—Bleed half a gallon, then if he will eat a mash give him one; give no hay; then give him half oz. rhubarb every night until it moves his bowels; then take of gentian root 4 oz., feni-greak 2 oz., nitre one-half oz.—mix and give a large spoonful every day; do not give him too much to eat when his appetite returns.

HORSE POWDER.—For Distemper, Hidebounde, Farcy, Colts, and all lingering diseases which arise from impurity of the blood or lungs. Take 1 lb, comfrey root, ½ lb, antimony, ½ lb sulpher, 3 oz, saltpetre, ½ lb, laurel berries, ½ lb juniper berries, ½ lb aniseseed, ½ lb rosin, 3 oz, alum, 5 oz, copperas, ½ lb, masterworth, ½ lb, gum powder. Mix to a powder, and give one teaspoonful in his food once a day, till cured; keep the horse dry, and from water for six hours after using it.

TONIC DRENCH.—For weakness and debility. Take port wine, 3 oz, tincture of cinnamon, ½ oz, powdered goldenseal 4 drachms.

LUNG FEVER.—Bleed four gallons from the neck vein, and take one oz. of aconite, add to it half gallon of cold water; drench him with one gill of it every 3 hours, blister him over the lungs, then give him water to drink that hay has been boiled in, and to each gallon of it one oz. of gum arabic, and half an ounce of spirits of nitre—give this every four hours, rub well, foment and rub the legs with alcohol and camphor, until they get warm—do not move him. Keep him in open stall, if hot weather.

EYE LOTION.—Take of linseed oil one pint, add to it two oz. of spirits of ether, gum camphor half an oz. Let it stand in some warm place until the oil cuts the gum, and it is fit for use.

STING OF BEES. Take olive oil, and lime water, equal parts. Applied externally.

EYE-WASH.—Take of sugar of lead 2 drachms, white vitriol 1 drachm, add to this 1 quart of soft water; let it stand for 6 or 9 hours, and it is fit for use.—Wash the eyes out well every morning, after first washing the eyes well with cold water; follow this up for 3 or four weeks, and then if the eyes are not much better, bleed and give a mild physic. The horse should be kept on low diet, and not over heated or worked too hard; scalded shorts and oats are good.

MANGE AND SURFEIT. —Bleed and physic, then take sulphur one-half pound, 2 pounds lard; mix well, grease the part affected every three or four days, stand the horse in the sun until all dries in, give him a few doses of the cleansing-powder.

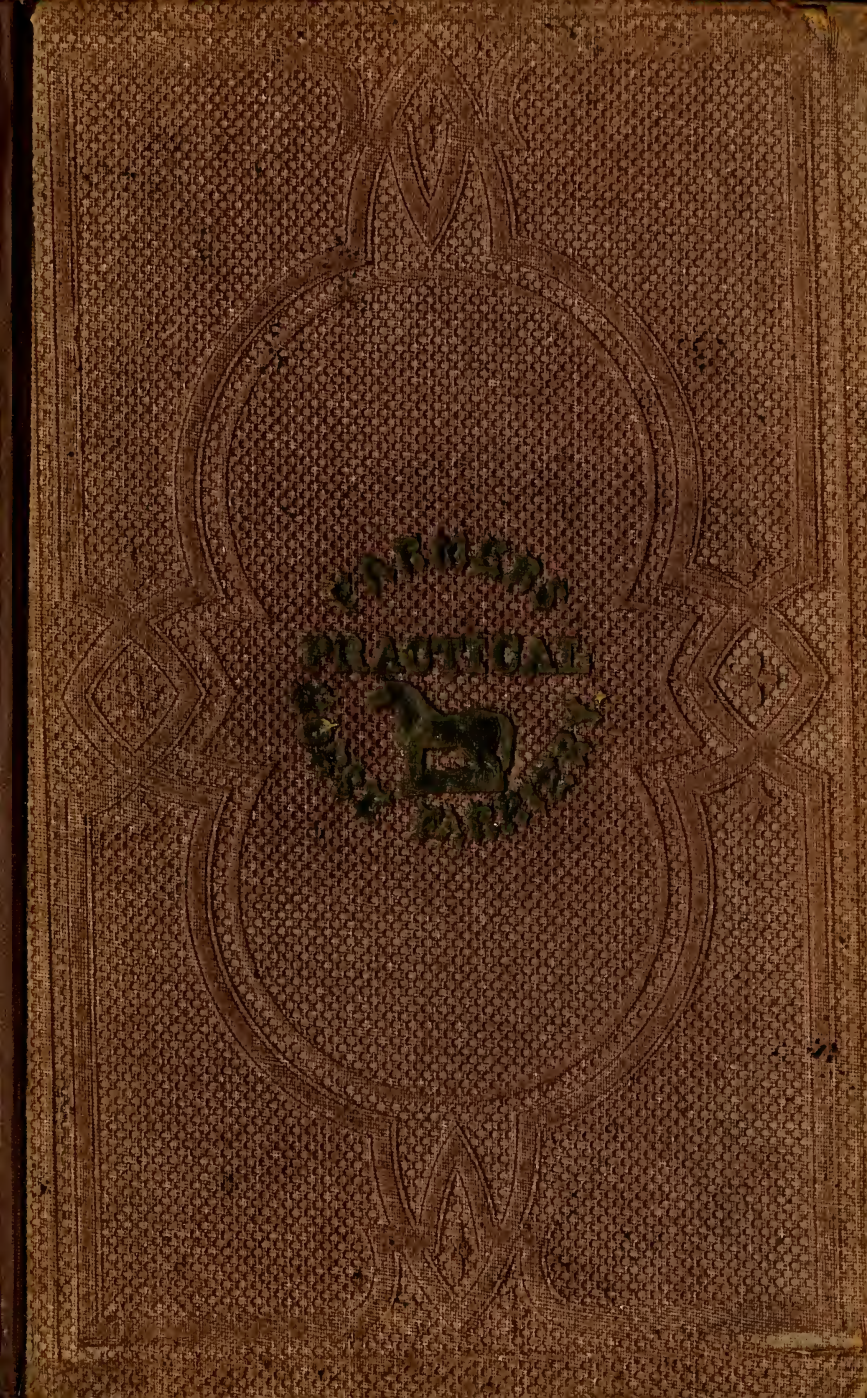
CONTRACTION OF THE NECK.—If it is taken in the first stages, bleed from the neck two gallons, then ferment or bathe the part well with hot water, rub it dry and take the general liniment and apply it every day, two or three times; this will cure, if it is of long standing. Then blister all along the part affected, with the liquid blister. Do this every three weeks until he is well, and rub with the white ointment.

DROPS TO MAKE OLD HORSES YOUNG.—Take the tr. of asafœtida 1 oz., tr. of cantharides 1 oz., oil of cloves 1 oz., oil of cinnamon one oz., antimony 2 oz., fenegreak one oz., fourth proof brandy half gallon; let it stand ten or twelve days, and give ten drops in a pail of water—or one gallon.

MEDICINES FOR THE HORSE—THEIR ACTION AND DOSES.

NAMES.	ACTION.	DOSE
Muriatic Acid,	Tonic,	1 to 2 drachms,
Nitric Acid,	Tonic,	1 to 2 drachms,
Sulphuric Acid.	Tonic,	1 to 2 drachms,
Gentian,	Tonic,	2 to 4 drachms,
Peruvian Bark,	Tonic,	2 to 4 drachms,
Sulphate of Iron,	Tonic,	2 to 4 drachms,
Myrrh,	Tonic,	2 to 4 drachms,
Sulphate of Zinc,	Tonic Astringent,	1 to 2 drachms,
Oxide of Zinc,	Tonic,	1 to 2 drachms,
Strychnine,	Tonic for Nerves,	1 to 3 grains,
Iodide of Iron,	Alterative and Tonic,	½ to 1 drachm,
Alum,	Astringent,	2 to 4 drachms,
Nut galls,	Astringent,	2 to 4 drachms,
Sugar of Lead,	Astringent,	½ to 1 drachm,
Iodine,	Alterative,	5 to 10 grains,
Corrosive Sublimate,	Alterative,	4 to 6 grains,
Hydriodate of Potash,	Alterative,	½ drachm,
Calomel,	Alterative,	10 to 20 grains,
Epsom Salts,	Purgative,	½ lb. to 1 lb.
Glauber Salts,	Purgative,	½ lb. to 1 lb.
Aloes,	Purgative,	1 to 2 drachms,
Calomel,	Purgative,	½ to 2 drachms,
Croton Oil,	Purgative,	20 to 30 drops,
Nitrate of Potash,	Diuretic,	2 to 4 drachms,
Carbonate of Potash,	Diuretic and Sedative,	2 to 4 drachms,
Tincture Digitalis,	Diuretic and Narcotic,	1 to 2 drachms,
Tincture Colchicum,	Diuretic and Laxative,	1 to 2 drachms,
Cream of Tartar,	Diuretic,	1 to 2 ounces,
Spirits of Nitre,	D uretic,	1 to 2 ounces,
Resin,	Diuretic,	½ to one ounce,
Spirits of Turpentine,	Diuretic,	½ to one ounce,
Emetic Tartar,	Nauseant and Diaphoretic,	½ to one drachm
Opium,	Narcotic,	1 to 2 drachms,
Laudanum,	Narcotic,	½ to 2 ounces,
Extract Hyoscyamus,	Narcotic,	1 to 2 drachms,
Caraway Seeds,	Carminitive,	½ to 1 ounce,
Sulphur,	Laxative and Alterative.	1 to 2 ounces,
Camphor,	Narcotic,	1 to 2 drachms,
Tinc. Veratrum Viride,	Sedative,	20 to 30 drops,
Belladona.	Sedative and Narcotic.	1 to 2 drachms.

Used externally, muriatic acid, nitric acid, sulphuric acid, and corrosive sublimate are caustic; iodine is alterative; and sugar of lead is sedative.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