



The complete American farrier and horse doctor : showing plainly how to breed, buy, sell, cure, shoe and keep that most valuable animal, the horse ...

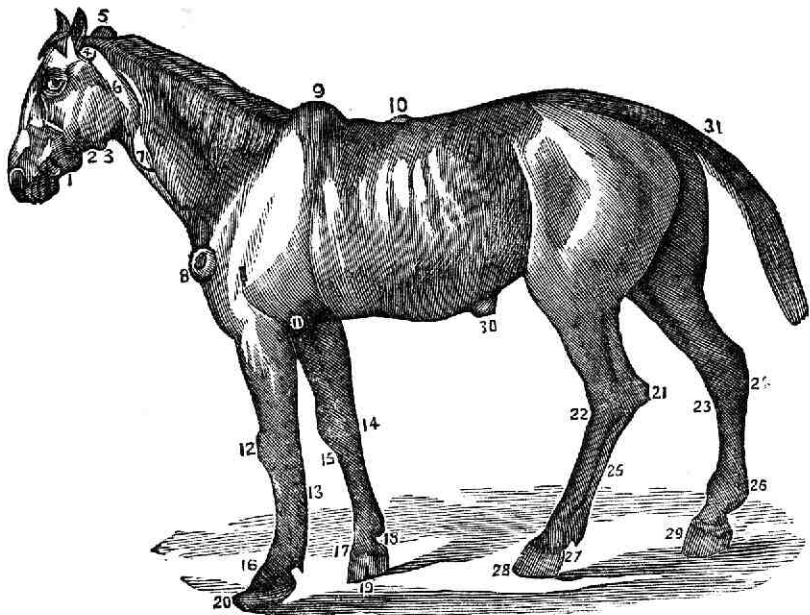
<https://hdl.handle.net/1874/30934>



THE
Complete American Farrier
and Horse Doctor.



1. Caries of lower jaw.
2. Fistula of the parotid duct.
3. Bony exrescence or Exostosis of the lower iaw.
4. Swelling by pressure of bridle.
5. Poll-evil.
6. Inflamed parotid gland
7. Inflamed jugular vein.
8. Fungus tumor, produced by pressure of the collar.
9. Fistula in the withers.
10. Saddle-gall.
11. Tumor of the elbow.
12. Induration of the knee.
13. Clap of the back sinews.
14. Malanders.
15. Splint.
16. Ring-bone.
17. A tread upon the coronet.
18. Quittor.
19. Sandcrack.
20. Contracted or Ring Foot of a foundered horse.
21. Capped hock.
22. Malanders.
23. Spavin.
24. Curb.
25. Swelled sinews.
26. Thick leg.
27. Grease.
28. A crack in front of the foot called cow crack.
29. Quarter crack.
30. Ventral hernia.
31. Rat-tail.



DISEASES OF THE HORSE.

14619

D 380

02A5241

THE COMPLETE
AMERICAN FARRIER,
 AND
HORSE DOCTOR;

SHOWING PLAINLY

HOW TO BREED, BUY, SELL, CURE, SHOE AND KEEP THAT
 MOST VALUABLE ANIMAL, THE HORSE.

WITH COPIOUS NOTES FROM THE BEST ENGLISH
 AND AMERICAN AUTHORITIES.

BY COL. CHRIS. FORREST.

WITH THE CELEBRATED RECIPES OF DR. CHASE OF
 ANN HARBOR.



WAKEFIELD:

WILLIAM NICHOLSON AND SONS.

LONDON: SIMPKIN, MARSHALL AND CO.,—W. TEGG AND CO.,
 HAMILTON, ADAMS AND CO.,

S. D. EWINS AND CO. PATERNOSTER ROW.



Contents.



CHAP. 1.—The Horse.

Breeds—Origin—History of the American horse—Effects of climate and food—Importation—Pony breeds 11

CHAP. 2.—How to buy a Horse.

What do you want him for?—What is his work to be, and what sort of horse does your work call for?—What sort of country do you live in?—What are your facilities for stabling and feeding?—What do you know about a horse?—What is your market? 16

CHAP. 3.—Looking at a Horse.

External peculiarities—Color of coat and feet—Condition of the coat—Taking him out of the stable—The age of the horse—The mark in his teeth—The head and neck—The ear—The eyes—The nostrils 23

CHAP. 4.—More about Buying a Horse.

The horse's neck—Poll-evil—The shoulder and its marks—The chest—The foreleg and knee—Knee-sprung and splints—Tied in below the knee—Windgalls 37

CHAP. 5.—External signs of Disease.

The body of the horse—Form of back and barrel—Flesh and the want of it—Fistulous withers and other sores—The loins and haunches—The hock and its diseases—Windgall, Curb, Chapped-hock, Spavin, Stringhalt, Mallinders, &c.—Feet and ankles 43

CHAP. 6.—Trying your Purchase.

Taking a guaranty—Get a chance to try the horse—Lead him home yourself—Signs of stumbling—The feed test—Promptness in taking home a bad horse 56

CHAP. 7.—Some General Advice.

Disposition, temper, courage—Deceptive appearances—English colt racing—Hard usage of young horses—Decrease of value—Increase of value—Problems for horse-owners 62

CHAP. 8.—Stables and Food.

Bad stabling in America—Stabling in the South and West—Sud-den exposure—City stabling—Stalls and boxes—What room a horse wants—Fresh air and ventilation—Stable floors and drainage—Light and warmth—Dampness and its evils—Location and temperature—Bedding and feeding 65

CHAP. 9.—Stabling and Grooming.

Grooming and cleanliness—Perspiration and scurf—Rubbing and brushing—Mud, wet legs and washing—Hoofs and heels—Cooling down—Shedding the coat—The fetlocks—The hoof in the stable—Preparation for shoeing—Wet floors and "Thrush"—Examining the shoes—Exercise 76

CHAP. 10.—Pasture Hints.

Soundness of hay or grain—Green food and soiling—Changes of food—Bad weather and extra care—Shelter in the pasture lot—Watering in pasture—Flies in the field—Taking up from pasture 86

CHAP. 11.—The Horse's Foot.

Careless shoeing—Feet of wild horses—Shoeing in ancient time—Army farrier—Necessities for protection—Uses of the shoe—Methods of acquiring information—Parts of the hoof and their uses—Waste and injury—Machine-made shoes .. 89

CHAP. 12.—Hints on Harness.

Harness for work—Bad harnessing a waste of power—Friction and sores—Woodruff on pulling—Tricks in work—Relief from harness in rest 116

CHAP. 13.—Stable Tricks and Vices.

Stall kicking—Weaving—Tearing the clothes off—Vicious to clean—Crib biting—Windsucking—Refusing to lie down—Pawing—Quidding—Rolling—Biting 121

CHAP. 14.—Out of Door Tricks and Vices.

Shying in harness—Rearing—Kicking in harness—Running away—Lying down in harness—Hard pulling—Overreach—Cutting—Stumbling—Balking 130

CHAP. 15.—Diseases of Horses.

Bone diseases—Classification—Splints—Ringbone—Spavin—Fistula of the withers—Poll-evil—Ulcer of the jaw—Bighead—Fracture 143

CHAP. 16.—Diseases of Horses.

The joints, muscles and tendons—Rheumatic inflammation—Bogspavin—Thoroughpin—Windgalls—Chapped-hock—Strain of back sinews—Strain of shoulder, knee, fetlock and coffinbone—Breaking down—Strains of hip-joint, stifle and hock—Curb—Dislocation—Wounds of joints 163

CHAP. 17.—Diseases of the Horse.

Internal diseases—Catarrh—Distemper—Bronchitis—Chronic cough—Roaring and whistling—Pneumonia—Congestion—Pleurisy—Broken wind—Phthisis—Bleeding at the nose 187

CHAP. 18.—Diseases of the Horse.

The abdomen and its appendages—Sore throat—Strangles—
Lampas—Gastritis—Dyspepsia—Bots and their history 215

CHAP. 19.—Diseases of Horses

Inflammation of the bowels—Colic—Diarrhoea and dysentery—
Strangulation and hernia—Worms—Liver disease—Kidneys
—Diabetes—Bladder, etc 227

CHAP. 20.—Miscellaneous Diseases.

Convulsions—Mad staggers—Madness—Megrims—String-halt—
Sunstroke—Stomach staggers—Lockjaw—Apoplexy .. 247

CHAP. 21.—Miscellaneous Diseases.

Diseases of the ear—Diseases of the eye—Cataract—Buckeye—
Simple inflammation—Epidemic ophthalmia—Specific oph-
thalmia—Surfeit—Mange—Mallinders—Scratches—Founders
—Navicular disease—Over-reach 255

CHAP. 22.—Fever—Typhoid Fever.

Fever—Typhoid fever—Glanders—Farcy 272

CHAP. 23.—Breeding.

Influence of sire and dam—Heat—Inheritance of qualities—Age
—Size—Foaling—Working mares—Weaning—Feeding—
Handling 278

CHAP. 24.—Training for Work. 285

The Recipes of The Celebrated Dr. Chase,

OF ANN HARBOR, MICHIGAN. PAGE 295

Bone-spavins	..	..	..	..	301
Bots	..	..	..	..	296
Broken Limbs	..	..	..	..	311
Colic	..	..	..	..	295
Condition Powder	..	..	..	..	309
Distemper	..	..	..	..	317
Eye Water	..	..	..	..	319
Founder	..	..	..	..	318
Grease Heel	..	..	..	..	313
Heaves	..	..	..	..	315
Horse Liniment	..	..	..	..	310
Hoof-ail in Sheep	..	..	..	..	319
Looseness	..	..	..	..	308

Ointment, Good Samaritan	..	..	..	320
Ointment, Horse	..	..	..	309
Physic-Ball	..	..	..	318
Poll-evil and Fistula	..	..	..	304
Ring-bone and Spavins	..	..	..	267
Saddle and Harness Galls	..	..	..	314
Shoeing Horses	..	..	..	318
Taming	..	..	..	321
Wound Balsam	..	..	..	312

The Veterinary Pharmacœpœia.

Alteratives	..	..	..	..	326
Alteratives, Tonic	..	..	..	..	326
Astringent Balls for Diabetes or Pissing evil	..	..	..	..	327
" Powder for Cracks	..	..	..	..	328
" Mixture for Diarrhœa &c	..	..	..	..	326
" Paste for Grease	..	..	..	..	328
" Paste for Thrush, Foot Rot, Foul in the Foot, &c.	..	..	..	..	327
" Wash for Grease	..	..	..	..	328
" Washes for Cracks, wounds &c	..	..	..	..	327
Balls, Cordial	..	..	..	..	330
" Chronic Cough	..	..	..	..	330
" Diuretic	..	..	..	..	331
Blisters Various	..	..	..	..	328—329
Clysters Various	..	..	..	..	329—330
Drink Cough	..	..	..	..	331
" Fever	..	..	..	..	333
" Malignant Epidemic Fever	..	..	..	..	333
" Urine	..	..	..	..	331
Embrocations for Inflammations	..	..	..	..	332
" Eyes	..	..	..	..	332
" Sprains	..	..	..	..	332
Foot Stoppings	..	..	..	..	334
Fumigations for Purifying Infected Stables, &c.	..	..	..	..	333
Hoof Liquid	..	..	..	..	333
Ointments for Healing	..	..	..	..	335
" Digesting	..	..	..	..	335
" Mange	..	..	..	..	335
" Scab, Mallenders, and Eruptions	..	..	..	..	335
Powders Cough	..	..	..	..	331
" Diuretic	..	..	..	..	331
" Fever	..	..	..	..	332
Purging Medicines	..	..	..	..	334
Purge Liquid	..	..	..	..	334
Scalding mixture for Poll-evil	..	..	..	..	334
Wash for Coring-out, Destroying Fungus or Proud Flesh, &c.	..	..	..	..	334
" Mango	..	..	..	..	335



Preface.



A MAN who does not honestly love a good horse does not deserve to own one, and certainly is not fit to write advice to others concerning the management of that noble animal. Mere fondness for horses, however, may co-exist with the most senseless prejudices and the darkest ignorance, and many a poor brute who has suffered torture from the hands of his human neighbors has had occasion to whinny forth, "Deliver me from my friends!"

In these latter days, to be sure, when all the world seems yearly to be growing more sensible and merciful, the Rarey system, or rather its professed principle, the example and instruction of such true friends of the horse as Frank Forrester and Hiram Woodruff, and many kindred agencies, have been at work to ameliorate the condition of "man's best and noblest four-foot friend." but a great deal remains to be done. The doctrines and teachings of our great American horsemen, second to none in the world, require to be condensed and popularized for general use, and it is to this task, in part, that I have set myself, with a genuine love of my subject, intending to write for American readers only. My hope is that the many scores of thousands who have been my willing followers in fields of fiction will go with me none the less readily now that I am dealing with useful facts and practical realities.

Experts and professional horsemen who may chance to refer to these pages will not be long in finding that I have not attempted to write for them, and may even differ with me on some points, though I have little fear that any two will find the same fault, so notional and self-opinionated are men on the subject of the horse. Genuine experts, and those who are really fit to be called "professionals," have no need of a popular treatise like this, but they are very few in number, while I have written for that vast multitude who have little or no exact information of this kind, and whose inquiring minds would only be confused and bewildered by technical terms and elaborate disquisitions. For this multitude the information furnished must needs be condensed and superficial, but should be such as will put them on the right track, so that all their future experience may build upon a good foundation of common sense, unhampered by crude notions and antiquated prejudices. The world has outgrown a good deal that was counted for wisdom a few generations ago, and some of the old "horse books" are but stupid collections of "old grannyisms," or directions for the commission of cruel barbarities in the way of cuttings, burnings, cauterizations, physicking, nicking, etc., which the veriest groom in the stables of Bonner or Vanderbilt would turn pale to think of putting in practice on anything worthy to be called a HORSE.

If I accomplish my real purpose faithfully and successfully I shall have done quite enough to make this treatise widely valuable.

CHRIS. FORREST.

The Publishers have been frequently requested to publish an American work on the horse, so that our English admirers of the noble animal may contrast the difference in the mode of treatment. They now offer this book as one of the best.

*** Valuable Recipes are added at the end.



The Complete American Farrier AND HORSE DOCTOR.

CHAPTER FIRST.

THE HORSE.

BREEDS—ORIGIN—HISTORY OF THE AMERICAN HORSE—
EFFECTS OF CLIMATE AND FOOD—IMPORTATION—PONY
BREEDS.

THAT the horse was intended for the companion and servant of the human race is evidenced by the fact that, next to man himself, he exhibits, of all created animals, the greatest adaptability to extreme changes of climate, usage, food, and other circumstances. With a rapidity which is little less than marvellous, he develops those special peculiarities of breed, involving changes of size, bone, muscle, and habit of life, which prepare him to meet the immediate necessities as well as resources of those who are to employ him. On the steppes of Tartary the horse seems to have been expressly designed for the vicissitudes of the hardy nomad wanderers whose mode of life requires from him little else besides speed and endurance: among the arid

deserts of Arabia he develops a light and almost fleshless contour, capable of sustaining an extreme amount of exertion upon a handful of barley and a few dates; in the low countries of Europe, where for ages he has never been called upon for speed, he becomes the gigantic, bony, muscular, powerful Flemish draught horse, once in as great demand for carrying heavily armored knights into battle as he now is to pull the mountainous loads of barrelled beer and other merchandise; while among the North British Isles he dwindles to a pony whose dwarfish proportions are as well supported on half-decayed fish as are his continental brethren on grass and grain.

It would seem that the history of the world had tested sufficiently the wonderful adaptability of the horse, but it remained for the New World to complete and verify the record of his powers.

When Columbus discovered America, there was not one solitary specimen of the equine race on all the vast expanse of continent and island, from Labrador to Terra del Fuego, and the fierce warriors who afterwards opposed the advances of Cortes and his men imagined the Spanish cavalry to be recruited from some miraculous race of centaurs:—horse and man were to them but one fear fulbeing, designed by the avenging gods for the destruction of offending Mexicans.

The different breeds of horses had therefore a new field wherein to test themselves, and from that day to this their history has been one of continuous experiment.

We may note that from first to last only serviceable animals have been brought over from the Old World, and for the most part only such as were specially select-

ed, either for military or domestic use, or for direct stock purposes.

No reliable record has been kept of the earlier importations, but we are aware, generally, of their special characteristics, and may even trace in their descendants some evidences of original peculiarities. The Spaniards, at the south of North America and in South America, introduced Andalusian barbs and other stock, of Moorish and Arab blood, while the French, the Dutch and the English, who colonized the more northerly regions, brought over with them the several breeds which in a manner represented their own nationalities. It would be a matter more of curiosity than service to inquire more minutely into the parentage and quality of these equine patriarchs, but we are able at the present day to note with what ready facility all original characteristics have yielded to the influences of climate, food and usage. Among our north-eastern islands the "shelties" of the British Isles have been almost precisely reproduced: Canada has brought out a distinct and peculiar breed of undersized ponies: New England, at an early day, gave us the Narragansett pacers, unlike anything else, and now nearly extinct, and, still later, the useful "Morgans:" our Western Indians have bred a race of ponies which have not even yet presented sure tokens of a distinct type, while far to the south the Spanish stock has developed the unmistakable and, except for certain uses, very undesirable *mustangs*. On the Pacific slope still another breed is rapidly coming to perfection, differing in many respects from all the others, but time has not yet sufficed to determine a distinct type: speed and endurance, with a diminution of weight and bone, seem

to indicate a Western development of a more than Arabic type of "travellers." A curious oddity of pony life has been bred among the endless marshes of the Atlantic coast of the Carolinas, in the shape of a race of little quadrupeds, for the most part tolerably well formed, easily tamed and tractable, but whose peculiar constitutions forbid their transfer to other climates. The writer of this was present, a few years since, when a large drove was brought in, fresh from the marshes, and purchased a very pretty and well formed stallion. His size, under twelve hands, was all that marked him as a "pony," as there was nothing of the heavy headed "sheltie" about him. Timothy and clover he rejected, and grain he did not understand: he endured a good deal of thirst before he would touch *fresh* water, but salt enough to make it a trifle brackish at once reminded him of his native "tide water," streams, and he took to it very kindly. An attempt to transfer him and some of his wild companions to a Northern State utterly failed, for, in the absence of his coarse swamp grass and cane-brake, he pined away and died.

Year by year our American breeders have persistently, if sometimes mistakenly, invested their care and cash in the importation of fresh blood from the various European breeds, and it is a question in the minds of our best horsemen if this process has not been carried quite far enough, whether, in fact, any additional transatlantic crosses serve any other purpose than to impede the natural development of the true American type of horse. Our North may borrow with advantage from our South, and *vice versa*, but it is by no means certain that Arabia herself has now anything desirable to lend us.

Assuredly we have no occasion to send abroad for any mate or match to that unrivalled animal for all purposes of work or pleasure, the AMERICAN TROTTER, to whose development so many of our soundest horsemen have devoted their capital and their intelligence. And yet in a country so vast as our own, including within its limits so many degrees of latitude and such endless varieties of climate, population and production, it is impossible that any one peculiar breed should prove universal in its adaptation, or that the same horse should be found equally valuable in all the multiplied vicissitudes of American life, and the recommendations and suggestion ventured in the present work will be made always with reference to the plain dictates of common sense, as based upon this fundamental fact. The beast whose special fitness renders him invaluable among the paved streets of an Eastern city would leave his carcass a dinner for the "Mexican eagles," by the roadside, long before his more enduring Western cousin had discovered that he was on a "long trail," or that fodder and stabling were unsatisfactory. Nevertheless, the son or grandson of that same Eastern stallion if *born* on the prairies, would be found, in every case, to have developed all the local peculiarities called for, besides carrying with him something from his birthright to convince his breeder that "crosses are desirable." Intelligent breeding in our climate should in due time make a "pony" of any kind an impossibility, but, in default of that, whole races, both of horses and of men, dwindle into ponies, the redeeming fact being that nobody is especially interested in their preservation, and that they are gradually "eliminated."

CHAPTER SECOND.

HOW TO BUY A HORSE.

WHAT DO YOU WANT HIM FOR?—WHAT IS HIS WORK TO BE AND WHAT SORT OF HORSE DOES YOUR WORK CALL FOR?—WHAT SORT OF COUNTRY DO YOU LIVE IN?—WHAT ARE YOUR FACILITIES FOR STABLING AND FEEDING?—WHAT DO YOU KNOW ABOUT A HORSE?—WHAT IS YOUR MARKET?—

ONE singular twist of human nature shows itself in the fact that no man has yet been found of such honesty or humility that he was not ready to advise his neighbor about buying a horse. Fellows who never held a rein or climbed into a saddle, are ready to cock their heads knowingly and shed a perfect flood of darkness and ignorance over the qualifications of any quadruped whatsoever that may be offered for sale. Our own notion is that, as a general thing, a man is his own best counsellor in such a case, if he will be guided by a little thoughtful common sense, and that if he doubts his own ability he had better either trust to blind luck or apply to a professional horseman. The latter course ought to cost him an honest fee, but would probably prove the best policy in the end. At all events, purely volunteer advice may well be discarded, especially if it comes from a "disinterested stranger."

As not every man, however, seems to be endowed with common sense, or the capacity to employ it in the horse business, we venture a few suggestions by way of aiding in calling that valuable faculty into action.

In the first place, then, if you want to buy a horse, **What do you want him for?**

What is the nature of the work to which you propose to put him? Do you want a roadster for steady and regular pulling, with a moderate load, and with very little occasion for speed?

Is it a horse for quick and light work, and now and then a demand for a rapid "burst?"

Do you want a plough horse, a fellow to stand up to his collar with a ton of hay or a load of stone behind him, a tower of strength and a mountain of bone?

Is your horse to work all day moderately, or a part of a day severely?

Is your case exceptional, and are you after a **show** horse, or that expensive luxury, a **fast** horse?

In short, **what do you want?** Make up your mind about that, the first thing, and also assure yourself that you will find no one beast that will be equally well adapted to all emergencies.

Flora Temple would hardly have distinguished herself before a dray, nor would Bonner be apt to appear on Harlem Lane behind the seventeen-hand beauties who do the pulling for the fire-proof safe men. The horse for his work and the work for the horse, and the man of sense will apportion the one to the other. Extremes should in most cases be avoided. Few men re-

quire a very heavy horse. Ordinary American farm work cannot profitably employ an elephant. A thin or weedy beast is used up too soon, though many such improve remarkably in work, and the better plan is to select a well-barrelled, strong-limbed animal, rather under sixteen hands high, and capable of being employed to advantage in a great variety of uses. That is the economical and business-like idea, but its application by yourself pre-supposes that you are not an idiot—in fact we would not undertake to advise a fool for any money.

And now if you have carefully consulted your business and requirements, and have fully made up your mind as to the special needs which lead you to such an affair as the purchase of a horse, suppose you look a little further and inquire as to the nature of the country in which you are to use your quadruped servant after you have bought him.

Is your horse to travel all day over pavements that will speedily develop every tendency he may have to weakness in hoof, bone or muscle?

Do you propose to haul heavy loads over flinty and unyielding roads, up hill and down, that will test the texture and condition of hoofs and shoulders to the uttermost?

Are you a dweller on soft prairie or bottom lands, where for three-fourths of the year it is a matter of indifference if your horse be shod or not, and where the changes of elevation are so moderate that with decent use defects of shoulder and loins need not soon become apparent?

If the former, you may at once reject an animal from whom you could obtain years of valuable service in the latter, albeit recklessness and ignorance will use up endless horseflesh under the most favorable circumstances. Contrary to some received local opinions, it should be noted that a light and wiry horse should never be put to heavy or steady work over soft and yielding ground and a beast of any make should be allowed to take his time if he is expected to last through the season.

Supposing these points so far settle that your head is clear concerning them, it would be well to give a few moments' attention to the nature of your facilities for feeding and stabling, for some horses will thrive well under treatment which would speedily destroy all the usefulness of seemingly much more valuable animals. Is your supply of feed good, and can you afford variety and change without too great expense, or are your surroundings such that a mule-like toughness of constitution is almost a *sine qua non*? If the latter, beware how you look out for too much "blood" or too great a delicacy of habit. Imported animals and their immediate descendants require too large an amount of care, jockeying and laborious stabling, to be profitable property for working farmers, especially in comparatively new countries. If you don't believe it, try a few experiments and report the results to the writer hereof. The history of a horse or two will be likely to prove quite sufficient, and experience is the most costly of all schoolmasters.

But we have not yet asked all our questions, odd as it may seem, and our next immediately concerns yourself.

‘What do you know about a horse, any way?’

Perhaps this should have been the first inquiry; at all events it is by no means the least important one, as will shortly be seen.

Are you good for anything to train a horse? That is, will a horse be apt to increase in value under your management, or do you only propose to buy one and use him up? Nine men out of ten leave a horse worth less than when they took him, while the wise and skillful tenth man gets his horse-work for nothing by reason of the way in which he develops all that is good and works out all that is bad from the beasts that come under his hand. The point for us to make, however, is this:—if you do not know enough to train a horse and improve him in the training, you must look out for one whose education has been properly attended to by some one else, and you must especially avoid purchasing any animal that has been ruined in the bringing up by some *other* ignoramus. If you are *very* ignorant you had better buy a horse whose age has so confirmed his habits, whatever they may be, that he is likely to be proof against any further blunders on your part, and you may expect him to wear stubbornly away under your mismanagement and allow you to learn something at his expense which will be of use to you in your next experiment.

If, on the contrary, you have been brought up among horses, and suppose yourself to know something about them, you can perhaps afford to pick up young stock and keep them until they are old enough for use. Say you get a likely four or five year old and gradually work

him in, according to his build and temperament, until he is fit for hard work. This is by far the most economical method of purchasing, other things being equal.

The number of those who only buy horses to use them up, as so much mere dead capital, is so very large that no intelligent buyer need fear the want of a market for anything that he has done with if he has only taken decent pains with training and other ordinary considerations. Almost every man who reads this will be able to call to mind some shrewd fellow of his acquaintance who always has good horses, never overworks them, and yet who so manages that his stable actually costs him nothing. Men like to buy of such fellows, for their equine pupils are apt to graduate with undamaged constitutions and singularly free from the vices superinduced by bad driving and other points of foolish training. That they are the exception rather than the rule is only another warning and a good "footnote" to this part of our chapter on buying.

It may be taken for granted that each individual buyer has settled all the points which we have raised in a manner most agreeable to his own personal vanity. If there is one point upon which every human being is thoroughly self-satisfied, it is assuredly his knowledge of horseflesh and his capacity for making the most of it, and, in any individual instance we should positively decline to argue the case. This therefore being settled, with all the other questions raised,

What is your market ?

Are horses plenty or scarce with you ? Do you live in a horse raising country ? are the animals nearest you

for the most part of one stock, bred to the peculiarities of the climate and the work, or can you have your pick of a large variety of breeds? As a general thing it does not pay to go too far from home to find the animal you are after, for several reasons. You are more likely to be sure both of the pedigree and individual points of a horse raised by your near neighbor, and the guaranty you get is more likely to be worth something. It takes a pretty good horseman to go around the country and "pick up bargains." Most of the men who try it, leaving out the professionals and the Methodist "circuit riders," get badly "picked up" themselves as a general thing. If you can get a horse that you have had your eye on since he was a yearling, and whose dam has taken your fancy for shape, endurance and general good qualities, that's your best chance, unless the training has been careless or cruel. Don't buy some men's best colts for any money: a horse is heir to the good qualities of his sire and dam and to all the bad ones of the human animal who raised him: he will suck in everything but politics and religion from his master. Supposing that you have had your attention called to an animal with which you are not altogether familiar, and that means any horse besides your own especial pet, you are at once called upon to settle many questions which are of the utmost importance in buying a horse and you may summon all your keenness and good judgment, for you may take it for granted that if you do not there will be a double sale of the beast and his purchaser. The best of men have a weak spot that shows itself in trading in horseflesh: a man can't even tell the truth about a horse when he is giving him away.

CHAPTER THIRD.

LOOKING AT A HORSE.

EXTERNAL PECULIARITIES—COLOR OF COAT AND FEET—
CONDITION OF THE COAT—TAKING HIM OUT OF THE
STABLE—THE AGE OF THE HORSE—THE MARK IN HIS
TEETH—THE HEAD AND NECK—THE EAR—THE EYES—
THE NOSTRILS.

IF now we suppose that you have made up your mind fully as to the answers you would give to the questions propounded in the previous chapter, and that you propose to depend upon your own judgment in the matter, we may enter at once into a discussion of those points and qualities, good and bad, which are or may be considered the general property of all horses, of every breed and race.

The question of legal guaranty, and what constitutes technical unsoundness, will be discussd hereafter in its proper place, but it may be taken for granted that the absolutely perfect horse has never yet been offered for sale. Each individual animal has his peculiarities, virtues as well as vices, beauties as well as defects, natural as well as acquired, and it is the business of the buyer to ascertain them for himself, so far as may be. With some changes, bearing upon special adaptation to different uses, nearly the same rules are applicable to all

descriptions of horses, and those changes are such as can hardly be made in a treatise like this. Let us suppose, then, that the horse you are after is an ordinary roadster suitable also for farm work, not too heavy, and from fifteen to sixteen hands high.

If you have gathered any prejudices about color, white feet, etc., from old proverbs or doggered rhymes, you may as well drop them. In this country, however it may be in others, color is a mere matter of taste, except where it is a mark or indication of some peculiar breed. The relation between different shades and markings and the temper, endurance and other qualities of horses, has its existence only in the fancy of old-fashioned dealers. This notion has been hard to uproot, and half the wiseacres in the country to-day are inclined to look askance at a horse with three white feet. However, taste is something, and a piebald horse, what they call in some places a "**calico**," or a muddy coated or "**flea-bitten**" animal, and some other eccentricities of shade, are not so attractive to the eye, nor are they generally so saleable, as a bay, a chesnut, or some other bright and agreeable color. The chief value of the appearance of a horse's coat, at first sight, is as an indication of his breed and condition. In warm climates the skin of the horse becomes thin, and his hair short and fine, while in colder regions the reverse is the case. The Arab or other tropical animal develops a sensitive cuticle with a coat that becomes as glossy as satin with good rubbing, while the "sheltie" protects himself against his long winters with a coat as thick and shaggy as a young bear's. Something analagous to this takes place in all the central and northern part of the United

States, and every horse regularly puts on and off his winter clothing. If a horse is bought while he is moulting or "shedding," the roughness of his coat is not to be counted against him, nor should he have in January the same smooth and shining surface as in June, unless he has been too tenderly and warmly stabled. A "staring" coat with the hair standing out in different directions from a hard, dry or unyielding skin, is a pretty sure symptom of something internally wrong about the horse, and should at least lead to a more thorough inquiry.

Examining the skin and coat, however, requires that the horse should be touched, and we are not ready for that yet. Before going at all into minute details, such as we shall explain hereafter, have your proposed purchase led out of the stable and take a good long look at him, at a distance of several feet. It may be he has already been brought out, but the buyer had better *see it done*, and note if the horse comes out readily and kindly, without making any trouble about it.

The first look at a horse should be when he is simply standing still, in the position which he assumes of his own accord, and that should be firm and easy, with his legs well under him, and without showing any disposition to favor or relieve of his weight, either of his feet. Should he seem to do this latter, or should he incline to sprawl out with either hindlegs or forelegs, there is sure to be a good reason for it, **and you had better look close before you buy him.**

If, after a general examination, the animal seems to be anything near your idea of your own requirements, your next business is to look for specific faults or defects,

of which every horse in the world may be said to have either more or less. Most of these are such as are not covered by any ordinary guaranty, or they may be as yet in the form of incipient tendencies, such as will escape a careless eye, but which nevertheless affect the value and usefulness of the horse.

Faults of training and education you can look for afterwards, but your first care must be for the body of the animal himself. This is a beautiful but very complicated machine, whose several parts are all so necessary, one to another and each to all, that defect or disease in any portion of the powerful frame detracts to a greater or less extent from the utility and durability of the whole. Every part of the animal should therefore be scrutinized with the utmost care, and no loud assertions of owner or bystanders should be allowed to counterbalance the testimony of your own eyes and fingers.

To facilitate the explanation of much that we have to say, we give, at the end of this chapter, a sketch of the skeleton of the horse, showing to what sort of a bony frame the muscles and other organs of which we are to speak are attached.

The first question to be asked, and the one most apt to be answered incorrectly, is concerning the horse's age. To be sure, you can have him warranted at the age which it pleases his owner to state, but it would be much more satisfactory to be certain about it, and this is not often possible, even for experienced horsemen, except within certain ages, however strong may be the assertions to the contrary. The skill of European dealers in "**making up mouths**" for sale is frequently

such as to deceive any but the best judges, but the wretched art is less practised in America.

Apart from the general appearance of the horse, the surest marks of his age are to be found in his mouth, and here the special examination of the buyer generally begins.

The teeth of horses, like those of men, are coated with an exceedingly hard substance called the **enamel**. This enamel covers all that part of the tooth above the gum and is supplied in an extra quantity at the top, as if to provide for being worn away in use: in the centre, however, upon the top of the tooth, the enamel seems to be bent inward and sunk into the body of the tooth, so as to form a little hollow, and, as the inside and bottom of this hollow become blackened by the food, they constitute what is called the "mark," and, as the surrounding ledge of enamel wears away, its gradual disappearance enables us to judge, approximately, the age of the horse. Ignorant men speak of the "filling up" of the hollow in the tooth, but this is an error, the disappearance of the "mark" is caused by the slow wearing away of the extra supply of enamel and other materials of the tooth.

In this country there is generally very little reason for any attempt at deceit in the age of young colts, and the consequences cannot be very material, even if the cheat is successful. At twelve months old, the colt has twelve front teeth or nippers, all of which are afterwards displaced by the permanent teeth. This treatise is not designed for the use of such professional dealers as desire to speculate in the purchase and training of miscellaneous colts, and they must know their business well

enough to distinguish between yearlings and two-year olds, or they had better retire. At four years old, however, the horse's mouth will be still imperfect. The second growth of teeth have got a good start, and some of them are perfect. The two teeth in front, in the centre, will be quite grown, with the sharp edge of the enamel slightly worn, and their "mark" wider and fainter in consequence. The next pair, right and left, will be well up, but small, yet with the mark deep and dark. The corner nippers will be flat, and with a fainter mark than the centre ones. They are as yet **first** teeth, the second not coming for some months later. With the grinders an inexperienced buyer has very little to do, as they will only confuse him. At five years, at which age we are too much in the habit of putting our horses to hard and regular work, the teeth are about complete. The corner nippers, the third pair of second growth front teeth, are fully developed, with a deep and irregular "mark," while the other two pair show signs of wear. The centre teeth will only show a black spot on a nearly smooth surface. The minor tokens, indicating more closely the changes between four and five years old, can only be judged of by men whose practical experience does not call for "book learning," and, if a case comes up for decision, the only way is to take the counsel of an expert. No teeth are shed after five years of age.

We have thus far spoken of the **teeth in the lower Jaw only**, as being those first and most readily examined. They also exhibit the mark more plainly by reason of the fact that they are more rapidly worn, and lose it first. It should be borne in mind that this wear

of which we speak, although it slowly destroys the *cement*, the *enamel*, the *dentine*, all the component parts of the tooth, does not at all decrease its elevation, for the teeth of the horse grow continually, and are longest in extreme old age. The upper teeth wear away more slowly, and an opinion, of more or less doubtful value, can often be based upon their appearance for a year or so after the lower teeth cease to be a guide. All this, however is subject to such changes from accident, food, and the individual habits, and history of the horse, that his age, like that of ladies, may be politely set down as "uncertain."

At **six years**, however, the "mark" will have so far disappeared from the two centre front teeth that only a discoloration remains at the bottom of what will then be the very slight hollow. In the next teeth the mark is short, wide and faint, and in the third pair the enamel is worn to a greater evenness, but the mark is clear. Note carefully if the tushes and grinders are well grown, even and in good condition. The teeth of a horse have a great deal to do with his health, as the proper management of his food largely depends on them.

At **seven years** the "mark" has nearly if not quite worn out in the four centre front teeth, and the tushes are more round and even than in younger horses. At **eight years** the "mark" disappears from all the six "nippers," or front teeth, in the lower jaw, though traces of it may be found in the upper teeth. The latter furnish a few hints for some months longer, but, generally speaking, a horse may be said to have "lost his mark" with the close of his eighth year, and from

that time forward his mouth is only of use by way of noting if his teeth are in serviceable condition. These tricks of the trade by which marks are counterfeited are not much in use in this country, and can only deceive the careless or the inexperienced. It is surprising, however, to find what an enormous proportion of the "aged" horses in the world are between eight and nine years of age. One would think it all but impossible for a horse to pass his tenth year.

There are signs, indeed, by means of which very keen and practised judges are enabled to form an opinion of some kind, up to the very last, but as no two of such "experts" have ever been known to agree, either as to principle or application, we need not trouble ourselves to put their gathered nonsense into print—it would not further our purposes a particle. Even in a horse known to be young, the buyer should note if there are any special **irregularities** of the teeth, if they are grown evenly and come well together. A set of teeth that have a scattered and uneven look are sure to diminish the comfort and usefulness of their owner.

In examining the horse's mouth, pay attention to the **gums** and the **tongue**, and see if they are in a natural and healthy condition. Scars of laceration by the bit may indicate bad training, or they may speak for an ugly temper, while cankers and bladders are pretty sure evidence of defective feeding, or an unhealthy condition of the animal.

We have declined going more minutely into a description of the teeth, for the reason that the wear in different horses, of the same breed, and in different breeds, is by no means uniform. Food also has its influence,

and "crib-biters" especially remove the mark very fast. No amount of written description will make a greenhorn a good judge of a horse's mouth, and experience itself affords only an approximation to certainty. Take *any* two horses, foaled the same day, and at any given time in their after lives their teeth will present such different features as to lead to varying judgments of their precise age, and there we may leave a very much vexed question.

If now you have learned all you can from your examination of the mouth, step back a moment and look at the **whole head**.

How does it compare with the body? Is it in good proportion, well held up and symmetrical? Or has it a heavy, over-loaded appearance, as if it would be something ugly to carry on a long march? Whatever the breed may be, racer or dray-horse, the head should be in keeping with the size of the horse, clean and well-made. Half the vicious biters, bad-tempered, unmanageable brutes with whom our own experience has brought us in contact, have been "**Roman-nosed**," the face describing a curve from the middle of the forehead outward to the muzzle; the other half have been too much "**basin-faced**," or the reverse of the Roman. A decent medium between the two seems to be nature's best design for good temper, although some of the best and toughest animals will occasionally turn up with a "bad face." The forehead should be broad and flat.

The **ear** is valuable, first as an indication of blood, and then of the disposition. It should never be disproportionately large or shaggy, and a limp, lop-eared

horse will cost his purchase money in whips. Prefer an erect, rather thin, intelligent ear, without too much of nervous motion in it. The latter is apt to indicate peculiarities of disposition that are quite inconsistent with comfort or safety to the rider or driver. A good, tapering muzzle, proportioned to the jaw, a face broad between the eyes, and not disfigured by those deep hollows over the eyes which surely indicate old age or bad condition, a pair of good, honest ears, and the buyer may confidently proceed to an examination of those useful organs, **the eyes.**

In the first place, are they both alike, in size, color, expression, and brightness? If they are not, something is wrong. The eyes of the horse are attached to muscles which are fairly bedded in fat, and as age comes on, this fat is absorbed, so that while the eyes of a young or middle aged animal are full and prominent, they afterwards acquire a contracted and sunken appearance. Disease will sometimes produce this effect.

If then the eyes of your proposed purchase are full, bright, prominent, and both alike, note if they are quiet and pleasant in their expression. Look out sharp for a horse that shows much of the **white** while he is looking at you or about him. He shows that most when he is glancing backward after a chance to do mischief, and if you are in search of a safe and quiet beast, you don't want that one, particularly.

The **eye** of the horse, as of all other animals, is a most delicate organ, likely at all times to sympathize promptly with the general physical condition. It may also be temporarily under the influence of mere

casualties, the effects of which will soon pass away, but as he will hardly ever be offered for sale under any such circumstances, the buyer may take it for granted, that any apparent defects, which he may discover, are the indications of more or less important diseases.

The protuberance, or cornea, of the eye, should neither be flat nor too prominent, but it should not have any tokens of cloudiness or "speck." Put your head down by the horse's cheek and take a look **across** the eye, as well as dead in front of him. You cannot of course, pretend to a scientific examination, but there must be some fault in your own eyes if you cannot distinguish the ordinary signs of local inflammation in the eye or its surrounding muscles, or even the indications of bad temper. The dulness consequent upon internal disease is so readily removed by administering certain stimulants that the **eye** is a general tell-tale of such matters only when the seller has been guilty of unaccustomed neglect, and the buyer must look further for information which, in a state of nature, would be readily furnished by the sensitive organs. If the eye is not "all right" the horse may still possess a good deal of value, and it becomes simply a matter of private judgment how far the specific defects discovered interfere with or diminish the value of the animal for the work to which he is to be put. Of this, however, be sure, it is not likely that the sight of the horse will improve as he grows older, and that although the present disease may be temporary, it will leave in the organ a disposition to a repetition of the same.

Do not leave the horse's head until you have glanced up his **nostrils** to see whether or not they are red and inflamed by the action of **catarrh** or some other disease which has been temporarily checked or hidden for purposes of sale. A brief examination of a few healthy horses will tell you how the internal membrane ought to appear, and you must be your own judge, having reference to the general color. If there is any **mucous discharge** that is about all you want to know,—don't buy him. The nostril itself should be wide and well opened, that the animal may breathe easily, and its relative firmness or coarseness will be according to the breed. The draught horse will show a degree of coarseness suited to his general organization.

The jaws should be strong and wide apart at the base, to give full play to the breathing apparatus, and so that the head can be more elegantly set upon the neck. This has its effect, too, upon the readiness with which the bit and rein can be answered by the action of the head.



- A. Molar teeth.
 B. H. Canine or tush.
 C. I. Incisors.
 E. Atlas.
 G. Orbit.
 M. Cariniform cartilage.
 N. Ensiform cartilage.
 O. Coracoid process of scapula.
 P. Spine.
 Q. Cartilage.
 R. Trochanter Major.
 S. Trochanterian crest.
 T. Trochlea.
 U. External condyle.
 V. Patella.
 W. Hock joint.
1. Cranium.
 2. Lower jaw.
 3. Cervical vertebræ.
 4. 4. Dorsal vertebræ.
 5. 5. Lumbar vertebræ.
 6. 6. Sacrum.
 7. 7. Coccygeal vertebræ.
 8. Sternum.
 9. 9. True ribs.
 10. 10. Cartilages of true ribs
 11. 11. False ribs.
 12. Cartilages of false ribs.
 13. Scapula.
 14. Humerus.
 15. Radius.
 16. Elbow.
 17. Os Pisiforme.
 18. 19. }
 20, 21, } Carpal bones.
 22, 23. }
 24. Large metacarpal bone.
 25. Outer small metacarpal bone.
 26. Inner small metacarpal bone.
 - 27, 28. Sesamoid bones.
 29. Os suffraginis.
 30. Os coronæ.
 31. Os pedis.
 32. Wing of pedal bone.
 - 32, 34, 35, 36. Os Innominatum.
 37. Femur.
 38. Tibia.
 39. Os Calcis.
 40. Astragalus.
 - 41, 42, 43, 44. Tarsal bones.
 45. Large metatarsal bone.
 46. Outer small metatarsal bone.
 47. Inner small metatarsal bone.

CHAPTER FOURTH.

MORE ABOUT BUYING A HORSE.

THE HORSE'S NECK—POLL-EVIL—THE SHOULDER AND ITS MARKS—THE CHEST—THE FORELEG AND KNEE—KNEE SPRUNG AND SPLINTS—TIED IN BELOW THE KNEE—WINDGALLS.

THE neck of the horse is composed of a number of powerful muscles, tendons, etc., arranged upon and shaped to a series of seven bones or *vertebræ* (see plate), and it must be looked at sharply by the purchaser. It must be exactly proportioned in length to the size of the horse and not too slender. Those proportions which are apt to strike the eye as most beautiful are also generally the best for strength and health. The mane will accord with the breed of the animal, thick, coarse, and shaggy in some, thin and fine in others. A very objectional feature, on many accounts, is what is called **ewe-neck**,—that is, the upper line of the neck is concave rather than convex, and the unnatural shape interferes both with beauty and usefulness, and is believed to include tendencies to throat disease. The neck should curve gently from the withers to the ears, and the head should be set on fairly and squarely: it should be thin and clean at the head, strong and muscular at the withers,

or the horse will neither carry his head well or be a tough and durable animal.

The last bone in the neck, joining it to the head, is called the **atlas**, and just at the juncture there is a liability to disease which we shall speak of hereafter, but which may be temporarily concealed, and which the buyer must look for. This is "**poll-evil**," and a horse with a running sore, or even bad scars, showing that a sore has been on the top of his head, at the juncture of the neck, is not a horse to pay much money for. There are other diseases of the neck and organs which it contains, but they do not show externally, as a general thing, and we will pass on to the shoulders.

The shoulder of a horse seems to have been expressly adapted by nature to withstand the pressure of the collar, and it will answer that purpose marvellously well, if the necessary human inventions and appliances are properly devised. Whatever the breed of the horse may be, anything approaching to a straight or perpendicular shoulder is practically a malformation, and should be accounted as such, for it materially detracts from his ease of action and endurance as a saddle horse, as well as from his power and ready application of force when used as a draught horse. The very heaviest draught horses, however, seem to form an exception to this rule. There are such things as a shoulder too slanting, and withers too high, but they are not common.

Here, too, in this external survey, begin to look for traces of bad harnessing and over-work, in the shape of "collar marks," scars, white hairs and other such

tokens. The shoulder-blade should be broad and flat, and in an animal designed for the saddle, or for light work, may be ever so lean, while in one which is to pull in harness, with heavy loads, it should be well cushioned, and protected by strong muscles in front. A glance at the shoulder of a dray horse will show, approximately, how this should be.

Breadth of chest between the shoulders, looked at from the front, is a very excellent thing, for it betokens that the lungs have room for fair play, but perpendicular depth, and the diameter at a drop-line from the withers will tell even more in that direction, for many very good horses have a narrow-chested look to a superficial observer. In order to get a notion of the present condition of the shoulder, the horse must be moved along a little. If he lifts his forelegs freely and easily, even if he limps, any fault he may have forward is not likely to be in the shoulder itself, but must be looked for lower down. The reason is that the shoulder bone is detached by **muscles only**, and he cannot have free play of his leg if these muscles are not all right. Temporary sprains of these muscles, from a fall or from overwork, are so easily remedied, that a horse is not apt to be offered for sale while suffering from one, but much more serious difficulties are apt to be charged to this account, that they may be made to appear of less importance.

We may pass, for the present, from the consideration of the shoulder itself, with the observation that the heavier the horse, and the more entirely he is designed for heavy draught purposes only, the less important becomes the obliquity of the shoulder, as the latter pro-

vides more especially for activity and ease of action. Indeed, the best Flemish dray horses show a degree of uprightness inadmissible in lighter and more active breeds.

Note next if the muscles of the forearm, beginning with its upper attachment, are broad, prominent and well developed, and that each separate muscle, considered by itself, has a look of being *short* as compared with the length of the forearm, and that the latter is long and well proportioned.

And now we come to that complicated and important structure, **the knee**, and here the buyer must pause for a most careful and considerate scrutiny. Take a side look first. Does the limb curve forward, unnaturally at the knee? Then some excessive pulling, or some untoward accident has been at work, and the horse is "**knee sprung**:" not exactly ruined, but so badly damaged, that his price must be severely taxed for that defect. City horses, drawing heavy loads over hard pavements, or those whose labors have been in hilly districts, are specially liable to this deterioration, while it is much less common on the prairies or in other level regions.

Now step around in front. The color of the hair at the knee is apt to be darker than the general shade of the horse. Three times out of four, dark enough to "mark him," enabling the observer to look out the better for the scars and tufts of white hair which indicate "**broken knees**." A horse may have been wounded in the knee by some accident—note if only *one* is scarred—or by some fall, from which he may have entirely recovered, but, if his knees are at all disfigured, don't buy

him until you have taken another look at his eyes, and have otherwise assured yourself, by trial, that he is not an habitual stumbler.

The knee should be wide in front: it can hardly be too wide, whether compared with the arm above or the shank below, as it is a sort of "plate," designed to receive the insertion of powerful and severely worked muscles. A thin-kneed or bow-legged horse cannot, by any possibility, be safe, strong, or enduring. If a scarred knee is accompanied by an upright shoulder, the horse may at once be set down for a constitutional stumbler.

If your eyes are keen, and you have carefully examined the **leg** thus far, though you have done it in half a minute, you have now arrived at a part of the animal which you must not by any means neglect. From the knee to the ankle, the horse's leg is composed of three bones, the large one in front, called the cannon or shank bone, and the two smaller or splint bones, behind. Viewed from the front, this part of the leg should be straight and thin, for it has little or no flesh, but looked at from the side, it should be deep and strong. Look around on the inside of the leg, and see if the smaller bones are well made and clean, or if they have thrown out any bony protuberances or "**splints.**" These latter are apt to interfere with the action and usefulness of the horse. The nearer they are to the knee, or the more "inside" they grow towards the large bone, the more likely they are to lame the animal. Splints come and go, and are more frequent in young and middle-aged animals, whose exuberant constitutions furnish more bony matter than nature requires. Some

old roadsters that have been crippled in this way, at last absorb or outgrow them. The eye itself may easily be deceived, but after feeling a few clean legs, the fingers will readily detect the undesirable deformity.

The horse's leg is a curious mechanical contrivance, and just below the knee is a tremendous ring by which the muscles are kept in place and through which they play, like ropes through a pulley. If, however, this ring is contracted, so that the leg looks thin and deficient in latter depth, the muscles cannot work freely, the horse is "**tied in below the knee**," and can neither be very fast or enduring. He will tire out too easily and be liable to sprains and sudden lamenesses.

Low down on the leg, near the pastern, both eye and fingers must search for slight swellings, soft or hard, and the harder they are the nearer the fetlock, the more they must be regarded, for they are what are denominated "**windgalls**." As a general thing they are no tokens of unsoundness, and they come and go on all horses, but some are more prone to them than others, and they are apt to cause temporary lameness. At times, from bruise, ill treatment, growth, or inflammation, they become unsightly and even dangerous.

The pasterns and feet are so nearly alike in the peculiarities and tendencies for all four of the legs, and of such particular importance, that we prefer to leave them until the last, and return now to the consideration of other features of our contemplated purchase. The horses are few, comparatively, who will answer satisfactorily *every* question which the eye of the purchaser has even thus far asked of him.

CHAPTER FIFTH.

EXTERNAL SIGNS OF DISEASE.

THE BODY OF THE HORSE—FORM OF BACK AND BARREL—
FLESH AND THE WANT OF IT—FISTULOUS WITHERS AND
OTHER SORES—THE LOINS AND HAUNCHES—THE HOCK
AND ITS DISEASES—WINDGALL, CURB, CAPPED HOCK,
SPAVIN, STRINGHALT, MALLINDERS, &C,—FEET AND
ANKLES.

THE body or "barrel" of a horse contains his heart, lungs, stomach and other vital organs, and there must be room in it for them, or the most perfect limbs in the world will avail him but very little. It is deficiency here, even more than defective limbs, that produces what is justly condemned as a "leggy" or "weedy" animal, and an undue excess produces a beast that is more likely to win celebrity as a feeder than in any more useful direction.

If you have any knowledge of how the horse before you has been kept or what have been his chances for work and food, you will be better able to form an opinion as to whether his condition as to flesh is for or against him. As a general thing horses offered for sale will be previously brought to look well, outwardly, and due allowance must be made for that. It is no great trick to put the most worthless brute in good shape for

the butcher, if that gentleman was after him, but mere fat is no indication of health or value. Better he should not make too prominent a show of flesh, for if he does you will have to work it carefully off before you really know what you have purchased. If you touch him on the ribs, however, fat or thin, see that the skin plays loosely and easily over them. A great deal is said, unnecessarily, about the shape of the ribs, but malformation is rare and only an expert can get much information from them.

The **withers** of the horse, which should be high, and his back, again furnish signs of the kind of work and treatment he has received, while spur-marks on his flanks may be indications either of his own temper or that of his rider, indifferently. Look out especially for sores or scars thereof, on or near the withers. If the horse has "**fistula**," a running sore, in that locality, don't buy him, and if the scar looks as if he once had one, remember that you have no guaranty against the old evil breaking out afresh.

Just back of the withers of any well proportioned horse there should be a moderate depression, and from here the line of the back should be nearly straight to the loins. Horses whose backs exhibit more of concavity are said to be "**hollow-backed**," and unusual height of shoulders and haunch sometimes gives the appearance where it does not exist, but in either case this feature is not to be considered a defect of itself. On the other hand a "**mule-backed**" or "**rail-backed**" horse has no business at all with a saddle on him, and is not always as valuable otherwise. As to the **length** of a horse's back, authorities differ. Our own opinion

would be that a moderately long barrellled horse is preferable for general work as having more room for the play of his muscles, provided his length is in proportion to his perpendicular depth at the chest and his transverse breadth at the loins. If this is otherwise, a heavy weight in the saddle or a hard pull behind him will break him down, for his length exerts a lever power. A round, well-developed barrel, not *too* long, and without any appearance of paunchiness, is apt to answer most purposes of work and health to the best advantage. Do not carry the notions of "length" too far, as short-bodied horses are generally strong, hardy and serviceable, and *disproportionate* length is almost a sure sign of either slowness or weakness. A "**hog-backed,**" horse, with a covex spine, has mistaken his vocation, he would have done himself more credit altogether as a hog.

The **loins** of the horse can hardly be too broad and strong, for on these depend both his pulling and carrying power. Fat will sometimes make them appear better than they are, but they must be looked to, narrowly. If they are thin, weak, or at all misshapen, there is no hope for work or usefulness that it will pay to invest much money in. Mere saddle galls, bruises and things of that kind, are so easily to be cured as a general thing, that it is only important to note if they have developed any ulcerous tendencies, such as would be apt to render them difficult to treat, though of course it would be very desirable to have your purchase clean of them.

The shape of the horse from the loins to the setting on of the tail differs materially in various breeds. In some, as in the English hunter and the Flemish dray

horse, the direct line is a gentle curve, or sometimes almost straight, while the American trotter shows an obliquity which seems almost a deformity to some of our brethren from over the water. This therefore may be put aside as of minor importance, but the **breadth** of the haunch is vital to the power of the animal, since the great muscles which are to lift and push him are to be attached to these bones, the largest and strongest in his whole body. Roundness and beauty are very well in their way, but in this country our best horses seem to develop, very often, a remarkably angular and ragged looking hip, which makes up in efficiency what it loses in good looks. This will show itself particularly if the animal has been hard worked and is a trifle thin in flesh.

And now we are compelled to be a trifle technical. Turn to our cut of the skeleton of the horse and note the position of the **hip** and the **stifle-joint**: the large bone between them is the **femur**, and in order to secure speed, or a free and easy motion of the hindleg, especially in heavy ground, as in spring plowing, it should be long and strong in proportion to the size of the horse. From the root of the tail to the point of the stifle-joint, flat measure, the distance should be about two feet for a horse between fifteen and sixteen hands high. If measured over the surface it will naturally be nearly three inches more, according to the swell of the muscles. A strain here is not very common, but is sometimes caused by violent exertion or falls, and the horse will show it at once on being moved off, by favoring the unsound side, or even by a positive limp.

The next bone below is called the **tibia**, and this also should be long and well set, covered with well developed muscles. If the thigh has a thin and lanky look, especially from behind, or if the two seem to spread below the *anus*, leaving a hollow there, the horse will speedily show weakness when he is put to heavy work or rapid motion; his constitution is probably bad.

The **hock** (see cut) is about the hardest worked joint in the whole skeleton, for its size, and nature has framed it and strengthened it accordingly, surrounding it with powerful tendons and muscles, but for all that its machinery will sometimes get out of order, and the buyer must have a close look at its condition. Nine-tenths of all the lamenesses in the hindleg are apt to come in here.

Near all joints there are placed what we may call "little bags" containing a mucous fluid for purposes of lubrication. If these become inflamed or enlarged by over work they will show themselves. On the forelegs they make "**windgalls**," but if just above the hock, on either side, they constitute "**thoroughpin**," which is not exactly unsoundness, but should lead you to inquire how it was they were brought out. We shall have more to say of them hereafter.

A more important matter is "**curb**." Three or four inches below the point of the hock, at the back, violent or sudden exertion will sometimes cause an enlargement. Either the ring-like ligament which ties down the tendons is strained, or its membranous sheath, and lameness is the result. Even if the swelling is so slight that you overlook it from behind, and it only shows a little at a side view, it will be slow to cure, apt to re-

turn, and will surely grow worse if the horse is put to hard work. Some breeds of horses are more liable to curb than others, and it may almost be considered hereditary. Look carefully therefore for even the slightest symptom of curb.

Another thing to be looked for is called by some "**bog-spavin**," and by others "**blood-spavin**." Look on the inside of the hock for something like a large windgall. There are veins between this swelling and the skin, and the flow of blood is so impeded as to interfere seriously with rapid motion. It will cause slight and frequently returning lameness, but does not destroy a horse for slow work. It is decided unsoundness in any horse, and is one of those difficulties that, even if apparently cured, will not *stay* cured. But you have not yet done with the hock. A most dangerous and troublesome malformation is "**bone-spavin**," and you may look for it on the inside of the hock in front. It is a growth of bone, showing itself above the proper level of the hock-joint, and an inexperienced eye will detect it most readily by seeing if there is any difference in the external contour of the two joints. The one which seems to be slightly enlarged is the one to examine more closely. The horse may not show any lameness just now, but he will surely do so in course of time, nor is the mere size of the growth any indication of its ugliness. Some badly spavined horses have a vast deal of slow work in them, while others, in which the growth seems only to have begun, are lame half their time and unfit for rapid work of any kind. If you see a suspicious lump, have the horse moved suddenly and quickly forward and note if he "*catches*" any in raising

that leg. The catching and the lameness may temporarily disappear in work, but after rest the old stiffness will come back again worse than ever.

"Capped-hock" is a swelling, a sort of soft tumor, at the point, caused by some injury, such as the horse may give himself in kicking, and even if it is not accompanied with lameness, it diminishes the value of the horse.

Sometimes over work will result in permanent enlargement of the hocks without seeming to destroy the usefulness of the animal, but such horses are not to be relied on. You will never know when, or for what slight cause they will fall dead lame and be laid up, in the very midst of your busiest season. Don't buy with so strong an indication that so important a joint has been weakened.

If there is a scurfy look at the bend of the hock, or a discharging sore, the stable management has been careless and bad. That is, **mallenders**, and is of no great account if the horse is otherwise sound, as it will yield to treatment, but it is of value as an indication of condition and usage, and must have its due effect on your judgment.

A very little motion will tell you if a horse has the "string-halt," by the jerky motion of his legs. It is likely to disappear when he is warmed up; it don't actually hurt him, and if it is not too bad, he may have a world of hard work in him, but you can never cure it, and it will be growing worse with age. It takes away materially from the good looks of a horse, and the pleasure of using him.

Now, stand behind your horse, and see if his legs from the hock down, descend perpendicularly to the fetlock. If the hocks are close while the leg spreads out, and the toes of the feet spread likewise, the beast is "**cow-hocked.**" He may be all the faster horse, for it gives him a chance to lengthen his stride, but he will be more liable to all the curbs, spavins and other difficulties that equine hocks are heir to.

A horse will not ordinarily be offered for sale when his legs are swelled, so that we need not linger upon the external symptoms likely to catch the eye. For some other items the reader is referred to the chapter on diseases and their treatment, and we will now pass to the consideration of what may fairly be considered the most delicate, complicated, admirable part of the structure of the horse, the one least understood and most abused, his "**feet and ankles.**"

As a species of commentary on the various remarks in this and the previous chapters, it may be said that any variation from perfect proportion in body or in limb should be thoughtfully considered, and any protuberance or unnatural appearance strictly accounted for. Such things as tumors, and the larger and more disgusting sores and swellings need very little description and are beyond the province of merely general rules and instructions. Here we must leave even the most inexperienced to the exercise of a fair degree of common sense, but it is surprising how easily even those who have been much among horses will allow themselves to overlook some of the most obvious defects in the feet and pasterns.

A brief study of the cut of the skeleton, as well as that of the "**points**" of the horse, especially if aided by an examination of the living animal, will force one or two important points upon the consideration of the reader. He will see that the **foot** of the horse, from the ankle down, is small in proportion to what is expected from it; that the amount of pressure and pounding it endures is enormous: that any malformation must be of more importance here than elsewhere, and that wounds and bruises are likely to be hard to reach or to heal. He will be likely, therefore, in looking at his proposed purchase, to search carefully into the nature of its "understanding."

The **pastern or fetlock**, in old or over-worked horses is apt to show signs of weakness by knuckling forward, unsteadiness or what is called "**grogginess**," and this tells its own story pretty well. Strain of the fetlock joint shows itself at once in swelling, tenderness and other signs of inflammation. It may be very slight or temporary, but the better way is to decline buying a horse so strained, as you cannot form a good opinion as to how far it will go.

Look on the inside of the pastern for signs of cutting or "**interfering**." Bandages, scars, or slight cuts will indicate the trouble. It is sometimes readily cured, but is oftener a troublesome vice, every now and then laming the horse, and making him very unreliable. The same may be said of "**over-reaching**" by the hind-feet.

The pastern bone should be either more or less upright, according to the breed and general build of the horse and the uses to which he is to be devoted. In

horses of a strong and heavy make, designed for draught only, a greater uprightness is even-desirable, as tending to greater strength, but for all ordinary uses, the pastern should slant at an angle of forty-five degrees or more from the level ground. This gives a greater elasticity and springiness of motion, and is specially indispensable in saddle horses. The fetlock joint should be of good size and clean, and if there are any wind-galls they should be as far above it as may be. The lower pastern bone is smaller than the upper, and makes little external show. It completes the junction with the foot. Here also there is liability to sprains, but the horse will be pretty sure to show them on being moved.

One of the worst things that can happen to the pasterns, upper or lower, on forefeet or hindfeet, is the "ringbone," or as some varieties of it are called, "side-bone." Unless it is so bad that the horse is nearly ruined, you will hardly notice at first sight the bony protuberance under the skin, just above the hoof, or even higher on the pastern, that marks ringbone. It is more common on the hindfeet. The only advice to be given is to not purchase a horse with these bony lumps on his pasterns, but insist on having one who is not doomed to lameness, and sure to be worth less and less to you every month you keep him.

The next thing to look for is what the English call "grease," but better known in this country as "the scratches." It is an inflammation of the skin of the heel, generally of the hindfeet, and may trouble the best horse in the world if he is not well cared for. The skin of the heel is different, in some respects, from the

other skin, and it is so exposed and has so much motion that it must be kept soft and pliable. If it is healthy it will feel greasy and moderately cool. If not, if bad stabling has combined with exposure and frequent changes of temperature to produce local inflammation, there will likely be a cracked or chapped and swollen condition of the heel and lower pastern. It may be nothing but "**chapped heels**," or it may be "**scratches**," and the one surely leads to the other unless attended to. If there is any discharge of matter from the cracks, the legs will be sure to go on swelling, and the lameness to increase. There is no great difficulty, generally, in curing "**scratches**," but they are not to be entirely disregarded in forming your opinion of the horse.

What is ordinarily called the "**hoof**" of the horse is a sort of horny outside crust or box, about half an inch thick in front, and becoming thinner towards the heels. Vertically, the crust does not vary much in thickness until near the top, when it becomes quite thin and is called the "**coronet**," and which is also different in its structure and nature. This hoof grows as your nails do, and in a state of nature will sometimes, where the ground trodden is soft and yielding, not giving wear enough, grow out and turn over, very much to the detriment and discomfort of its owner. The writer of this has seen such a "**turn-over**" more than five inches long, on a wild pony from the marshes. This crust, however, is not only of the utmost importance, but it is liable to diseases and accidents. It is, if healthy, exceedingly tough and elastic, but if kept too dry, or if internally inflamed, it becomes hard and brittle and will

chip off. Some horses are always liable to this in the summer, and are sometimes left without hoof enough to nail a shoe on or to protect them from contusions. Many horses, also, are afflicted with **sand cracks** or splits, up and down the hoof, and these are to be especially looked out for.

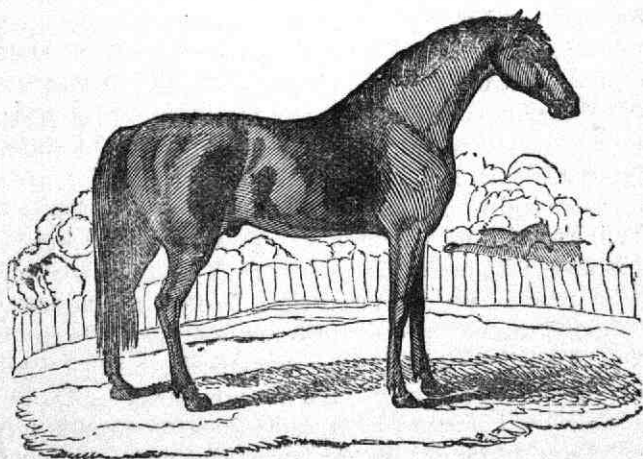
Positively reject any horse who does not show a good healthy appearance of the "**coronet**," or at the junction, all around, of the foot with the pastern.

There are a great many superstitions about the shape and form of the hoof, varying in choice between the "**mule-foot**," or straight and small soled hoof, and the wide, flat hoof, and the happy medium is doubtless best, but the hoof changes its shape with age and use, and especially with the aid of barbarous and bungling smiths. Your own eyes can tell you if it seems to retain a natural and healthy appearance, firm and strong, uncracked, unbattered or torn, and on lifting it up you can tell by eye and touch if the frog is cool and unfevered, and if there is no appearance of disease.

Over a very large part of our states and territories shoeing is unknown, except it may be in the winter, while the ground is hard, and here the hoof has both a better and a worse chance. Better, for it is delivered from ignorant smiths: worse, for it is not protected sufficiently while pounding upon the hard-baked roads of summer. The more roads there are built, and the firmer they are made, the more absolutely necessary will shoeing become, but in forming an opinion of the foot of your proposed purchase, you will do well to consider under what circumstances, in this respect, he has been raised and worked.

It is noteworthy that three-quarters of all diseases of the horse's foot are diseases of the stable and the horse-shoer, of which the animal knew nothing in a state of nature.

Of these, however, we shall have more to say in their appropriate place, and must refer to those chapters for further notes on that subject, if any are needed.



CHAPTER SIXTH

TRYING YOUR PURCHASE.

TAKING A GUARANTY—GET A CHANCE TO TRY THE HORSE
—LEAD HIM HOME YOURSELF—SIGNS OF STUMBLING—
THE FEED TEST—PROMPTNESS IN TAKING HOME A BAD
HORSE.

WITHOUT descending into minute points, we have now indicated most of the inquiries which a comparatively inexperienced buyer should make of an unknown horse. We have purposely drawn them in a somewhat rude and crude outline, because that is all that would be of service to any but a man of such experience as to require little or no advice, but we may well remark here, that a man who seems to know what he wants and where and how to look for manifest defects, and who also knows enough to keep his mouth shut and make no leading remarks, is much less likely to be imposed upon than others. Dealers will hesitate, naturally, to try the ordinary tricks of the trade upon him, and will even tell him, voluntarily, many things that he desires to know. He has now taken a fair outside view of his horse, as he came from the stable, and may be said to know that he is not absolutely worthless so far as external indications go. If he is immediately pressed to make his purchase and use his horse, this is

about all that he can do, and he must have his guaranty drawn and signed and lead away his purchase. The "guaranty" should read somewhat as follows :—

"Received, December 18th, 1876, of John Jones, £. s. d. for a sorrel gelding, fifteen and a half hands high, or thereabouts, hereby warranted by me to the said John Jones or his assigns, to be only five years old, sound, free from vice, and quiet to ride and drive.

PETER SMITH."

If only the words "**warranted**" or "**warranted sound,**" are put in, the horse may be full of all vice and unfit for any work from bad training, and the worthlessness is not covered. A guaranty of a horse is in the nature of a common law contract and **covers nothing whatever** which is **not clearly expressed**. You may have bought a living epitome of all the diseases horseflesh is heir to, and you are without a remedy unless your warrant gives you one. Otherwise there could be no market for unsound horses. The rule is founded in justice and common sense, though it perpetually leads to abuses by reason of the sharpness of some men and the stupidity of others.

If you have doubts of the solvency of your seller, insist that some decent man shall sign with him. As matters are now in the United States, your guaranty requires a stamp according to the laws at the time of your purchase, as it is a conditional promise to pay money at some future time. You can yourself affix the required stamp and cancel it. The best guaranty in the world, however, is after all only a crutch to

lean on, and a law-suit is as much to be shunned as a bad horse.

If you are a respectable man of business, however, you have so timed your purchase that you are not compelled to be satisfied with the results of your hasty scrutiny, but can provide for a trial and have a few days leeway before finally closing your bargain. Take warning that if the seller too strenuously objects to giving you a fair chance to test your purchase, there is surely a good reason for his so doing. If he knows his horse to be all right, he will be glad to have you also find it out. So, then, if you can get your few days, do not have your purchase harnessed or saddled; let only the halter be on him, let no man follow or accompany you; and lead the horse quietly away by yourself, and lead him as long a walk as you conveniently can. If he follows you readily and kindly, that is something, though it sometimes indicates want of spirit, instead of thorough training. You must be the judge of that.

Do not stop to look back at your follower in a way to startle him except once or twice to see if he immediately pulls back and braces himself to break away, as that is a sure sign of vice or bad training. Lead him along leisurely and quietly, up hill and down, and over as much rough and uneven ground as possible. He cannot fail to show whether or not he is a good walker, and that settles the question as to the **soundness of his shoulder and hips**. The chances are two to one that, if he is an habitual stumbler, that careless way of loose leading will give him a chance to show it, which he will by no means neglect. He will also be sure to favor either of his feet that may happen to be

at all tender, either in leg or hoof, even more evidently than if he was being urged forward by fear of whip or spur. If he is in the habit of shying, however, he will not be so apt to show it now, for he is being led, not driven, and he has a horse's confidence in his human halter-holder.

* In going through your gate or over your bars, you may have a chance to guess at defects in his eyes, by the cautious or clumsy manner in which he feels his way in.

Note if he pulls back at the stable door, or shows any signs of fear. If he does, and there is nothing the matter with *your* stable, be very sure that he has had trouble, probably deserved, in his own. In entering the door, note if your new purchase lowers his head, as if he feared to strike it. If so, it has been tender at some time, and you may take a second look for the signs of **poll-evil**.

And now you have got to pass where you must be at once indulgent and severe. Your horse is strange, and may well be a trifle nervous in new quarters, with unaccustomed voices and faces, especially if he is young and spirited, and here you may be indulgent with him. His nervousness will at least help you to discover his bad points, for it will be apt to lead him to a general display of them all, and this is why dealers object to giving this "**trial time**," unless they can themselves have a hand in the management and showing off.

Put the horse at once on a somewhat short allowance of dry fodder, the driest you have. Not for cruelty, but to see if he has any courage or other signs of dis-

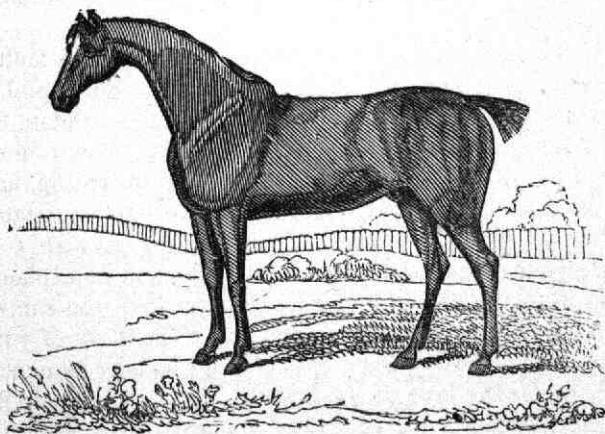
ease of the throat and lungs. If, too, he was under the influence of stimulating food at the time he was shown you, this will most speedily bring him back to his every day condition.

Then, on the following days, will come the several experiments in riding, driving and pulling, and here all merely verbal instructions would be at fault. If you do not know how to harness or handle a horse, or how to ride or drive one, you might worry the best quadruped in the world into all imaginable exhibitions of vice and temper. Such hints as may serve as a partial guide in a further inquiry into the training and condition of your purchase, must be gathered from a careful study of the remaining chapters of this book. This is equally true concerning both faults and diseases.

If we may suppose that you have discovered faults, defects, or signs of disease, which in your opinion traverse the terms of your warranty, do not hesitate for an hour; have the same duly noted by two or more credible witnesses, make a note of it all in writing, and at once lead back your rejected purchase to the stable from which you took him. Let a witness go with you, state your objections, listen to no argument or explanation, formally demand your money, get it if you can, at all events leave your horse and make the best of your way to such further legal proceedings as may be necessary under the laws of your State. If you have paid no money, so much the better, as you are then pretty safe after you have returned your horse with a statement of the reasons as directed. By no means keep him twenty-four hours after you have made up your mind that you

don't want him. Neither be persuaded to surrender your guaranty, if you have one, with the horse, as it may protect you from further annoyances that you dream not of.

And here we will close our outline of hints about the very simple business of "buying a horse."



CHAPTER SEVENTH.

SOME GENERAL ADVICE.

DISPOSITION, TEMPER, COURAGE—DECEPTIVE APPEARANCES—ENGLISH COLT RACING—HARD USAGE OF YOUNG HORSES—DECREASE OF VALUE—INCREASE OF VALUE—PROBLEMS FOR HORSE-OWNERS.

HORSES are after all a great deal like men, and it will not do to put too much in externals. Disposition, pluck, fire, that inscrutable something in man and beast which the old Romans called *virtus*, and which is more than beauty and more than muscle or bone, must be taken into the account. Some of the best horses in the world's history have deceived the best judges of their day, and we might multiply examples, but we prefer only to draw one moral:—"When you get a good horse, keep him, **keep him!**" If you have tried him in various ways and found that he is about what you want, let no temptations of flashy "trades" or "boot" lead you to part with that most excellent friend and profitable servant, a thoroughly good horse.

The remainder of this book will be devoted to various treatises on the best way of using him in work, housing him, feeding him, and treating his illnesses, so far as general instructions can safely go.

It is matter for general congratulation in America that no such stupid and cruel system as the English

racers has yet sapped the vitality of our best breeds, but we need to be on our guard lest avarice shall perform an almost equally evil office for us. The English colt is made to train for races and run them at two and three years old, and the consequence is, according to no less an authority than "Stonehenge," that during the past ten years the Derby itself has five times been won by unsound colts, whose trainers were immediately afterwards compelled to put them out of work, either from diseased feet or a break-down. How large a proportion of unsound colts were found among the losers of those and other races, or among the immense and motley herd that every year break down in training and never show on the course, no English trainer or writer has been frank enough to confess, but they are going forward with their hot-house forcing system, breeding in-and-in from these diseased and ruined "winners of the Derby," &c. Where *they* will end is none of our business, but there can be no doubt that a vast number of horses in America are put to too hard work for their age and therefore fail of ever becoming as good as they might. A horse completes his dentition at five years old, and is then said to be mature, but if his owner is a little careful and easy with him, for that year, he will be all the more apt to be sound, hardy and serviceable in his seventh, eighth and ninth years, and so on up. The average age of the horse in a state of nature, is about twenty-five years, and if he is permitted to begin life with a decent constitution, is not foolishly broken down while a mere colt, and is afterwards treated well and wisely, there is no reason why he should not continue useful at least till he is twenty. This is especially

true of mares, which are generally longer lived, for various reasons, than either stallions or geldings.

It has been common with some writers to count the annual decrease in value of a horse, after five or six years of age, including insurance and interest, at one-fourth of his cost price, and it may be that this is not far from right. If so, what volumes does it not speak for the stupidity, folly, cruelty and mismanagement of American and English horse-owners! The fact is, that from five to eight years of age, a horse ought to constantly increase in actual power and usefulness, and, therefore, in real value. Perhaps there is a good time coming, even for horses.

The problems which we would suggest for the consideration of every human being who comes into possession of a horse, are, "How can I increase the value of this quadruped, either in use or for sale? How can I overcome such faults and defects, as he may now have, while I keep him from acquiring others? How can I make him last the longest, and perform the greatest amount of good work for myself and others?"

In anything like horse-breeding and raising, other questions come in, and these will be duly attended to, in their proper place, but for the present we only propose to have a sharp eye out to the comfort, safety, and pecuniary well-being of those of our readers, who may happen to be owners of horses, purchased or otherwise.



CHAPTER EIGHTH.

STABLES AND FOOD.

BAD STABLING IN AMERICA—STABLING IN THE SOUTH AND WEST—SUDDEN EXPOSURE—CITY STABLING—STALLS AND BOXES—WHAT ROOM A HORSE WANTS—FRESH AIR AND VENTILATION—STABLE FLOORS AND DRAINAGE—LIGHT AND WARMTH—DAMPNESS AND ITS EVILS—LOCATION AND TEMPERATURE—BEDDING AND FEEDING.

COMPARATIVELY speaking, having in mind the vast number of our horses, there are very few really good stables in the United States, in spite of the undeniable fact that it costs no more to build a good stable than a bad one, while nothing is more positive than that bad stabling, and its consequences, destroy more horse-flesh, every year, than cruelty, disease otherwise caused, and overwork combined. In the Eastern and Northern States it is hardly comprehended, that over an area compared to which those States are but a "patch," the horse is deemed competent to take care of himself during the winter months, and the idea of careful stabling is almost a matter of ridicule. Long residence in the South, the West, and the South-west, has made the writer hereof familiar with the abuses to which horse-flesh is subject, in those seemingly favored climates, and to lend the weight of experience to his assertion that not even in Maine are good stables, adapted to the

climate, more necessary than in Virginia, Southern Illinois, Kentucky, Arkansas, and the new States now arising in the far interior. During a part of the year, and in any of our climates, the changes of temperature, and the chances of severe exposure, whether to man, or beast, are of no account, but in no region within our borders, does this continue the year around. Even in the all but tropical climate of Southern Texas, the destroying "norther" will suddenly and unexpectedly swoop down upon the tender and unprepared bipeds and quadrupeds. As a rule, while no system of stabling (for man or beast) can be too complete, or provide too carefully for all ordinary wants, those climates which tend most to enervate the system of the horse, and unfit him to endure hardships of temperature, or tempest, by that very fact most clearly demand that their exceptional conditions should be most carefully guarded against. A good shelter is as indispensable in Texas as it is in Michigan.

In cities, or wherever "room" is an object, the horse must be confined to a "stall," unless his value or the state of his health entitle him to the temporary honor of a box, but in the country generally there is little reason for restricting him to penitentiary measurement. We have seen some admirable homes for horses made, out on the prairies, out of loose log walls, and a floor kept dry by a deep ditch dug on the outside.

As not one in a thousand of our readers has any money to sink in experiments on fancy stables, even if he has obeyed all our other suggestions as to buying a horse and bringing him home, we would now offer the following as the desirable features of a good stable, add-

ing that the most expensive and elaborate establishments in and around our great cities have generally failed in obtaining them, while many a ricketty old "pole-house" on the prairie has supplied them in perfection. There should be room in which to stand up, feed, lie down, stretch out, and even turn round. Neither man nor horse should be put into a "coffin" until he is dead.

There should be plenty of air. Not an occasional blast through the door, to chill damp heels, and shock tender places generally, but an equal and easy circulation, carrying off foul smells, to which decent horses are sensitive, and otherwise giving the lungs of the imprisoned animal a chance to continue undiseased.

There should be a **dry and well-drained floor**, and it must be made soft and yielding, by litter or otherwise, so that the muscles of the legs may not be stiffened by standing on it, or the hips, shoulders, etc., wearied out when the horse is lying down. Even such received authorities as Youatt, Walsh, and McClure, and others, seem to take it for granted that the floor of a stall or box must "slope backward" in order to secure drainage and dryness, thereby insuring an unhealthy and annoying strain on the horse's kindfeet and quarters. A man who can't drain his stable without such a slope, should speedily forget all his *Yankee* ancestry.

The stable should be not only a shelter from sun, rain, and storm, but should be capable, in due season, of being made exceptionally warm, for the occasion, and then alone, of all the year, it may excusably be made "dark" for the time being. As a general thing, the **lighter** the stable is the better for its occupants.

There is no stable on the wildest prairies, in the newest settlements, whose builder and owner cannot profit materially by paying due attention to the above hints, and as a general thing, he can do so practically without adding greatly to either his trouble, or his cost. To an immense number of horse-owners, in cities especially, more room is impossible, more light is out of the question, ventilation is one of the fine arts, and a dry, clean, soft, well-bedded floor is a matter of enthusiastic aspiration rather than of immediate practical attainment. We are sorry for them, but even to them, as well as to our more fortunate country cousins, we may be able to offer a few additional hints.

Whatever your stable may be as to other points, it must absolutely not be **damp**. The horse comes from a dry climate, originally, and his constitution bears this special analogy to that of his human master. Starvation itself hardly tells on him more injuriously than a damp stable. He loses his endurance and his appetite: his coat stares in all directions: his head droops and his spirits ooze out at his shivering extremities: he loses flesh: and then come chapped heels, scratches, hide-bound, swelled legs, inflamed eyes, coughs, colds, and all other evils, and, if any horse epidemic happens to be going the rounds, it is pretty sure to step in to the rescue of the victim of a damp stable.

In cities a man cannot help himself, but in the country he would do well to build his stables on a little knoll, or the side of a gentle slope, that he may secure that good drainage which is the *sine qua non* of a good stable. As to which way the stable is to look, that must be governed by the prevailing winds on that par-

ticular spot, bearing in mind that no two are alike. Generally speaking, a southerly front is best, but what may be good on *your* hillside is by no means sure to be the thing for your neighbor.

There is a natural difficulty in keeping down the temperature of large stables, where many horses are kept under the same roof, but much may be done by means of slight board partitions and separate ventilation. Not more than four horses should be kept really "together," except in winter, as their animal heat will be sure to produce an unfavorable excess.

Even in the country a "box" or large, loose stall, can hardly be provided for more than two or three favorite animals, but its advantages are obvious, and in all training or racing stables such boxes are kept at least for the more valuable animals, or for those who are sick. The horse, however, is a gregarious and sociable creature, and he will do better if he can be kept within speaking distance of one or more of his kind. This peculiarity differs with different individuals, but some horses will even lose flesh if confined too much by themselves. Whether in stall, or in box, there should be nothing left around in the way of nails, spikes, corners, or other protuberances, upon which the horse will be in danger of injuring himself in any of his movements. If this is provided for there are very few reasons bearing only on particular cases, why the animal should not be left entirely loose, unhampered, unhaltered, unconfined except by his four smooth walls.

A "box" should be at least nine feet to twelve feet wide, and half as long again, while six feet wide will do very well for a mere stall. As to the materials to be

employed, these are necessarily governed by the place and circumstances, as well as by the pocket of the builder, but the real essentials of health and comfort can be secured almost as well by the poor man as the rich, except in cities. If the loft or space above the stall is used for storage of any kind of grain or fodder, care should be taken to have the floor tight that no dust may sift down from above to annoy the eyes, nostrils, or lungs of the horse, and that the exhalations from below may not come up to taint the food. This end cannot be secured in feeding with the old-fashioned "manger," contrived to accommodate laziness, and secure the greatest amount of waste with the utmost possible inconvenience to the animal. In a state of nature the horse always stoops his head for his food, and the same plan should be provided for in his domesticated life. It may cause a very little more trouble, but it will pay in various ways.

In the rural districts of this country, and especially in the West, "litter" costs little or nothing except a little care and foresight, and even where it is comparatively scarce it is one of those things in which it is very easy to be "penny wise," as a dry, clean, and plentiful bed is of prime importance to the health and working condition of all horses.

Whether **box** or **stall**, or whether he is to be left loose therein, or tied up, the stable is the house and home of the working horse, during, at least, the larger part of his life, and its arrangements and provisions are of such importance that we have spoken of them in the first place. Some animals, of exceptionally tough organizations, will seem to do well in almost any sort of a

hovel, but with nine out of ten, good condition is impossible for any length of time without proper attention to the leading points which we have mentioned.

And now, if the shelter is attended to, we may proceed to that much vexed, and most important question, the **food and drink** of the horse.

The great mass of controversy on this subject may be promptly set aside as being of only local application, and with it, as a matter of course, almost all of the singularly inapplicable, and often incomprehensible stuff, which so many so-called "American," books on the horse, reprint from English farriers. That which may be very good in England may be very bad, or quite impossible here; and such is the all but infinite variety of our soil, climate, and productions, that a set of rules on *specific* feeding, designed for general use, would be simply laughable if they were not also likely to be generally destructive.

It is to be regretted that, over so large a part of the United States, farmers and others who ought to know better, and for the greater part do know better, permit themselves to be so lavish and careless in the use of so heating an article of diet as Indian corn, to the exclusion of safer, and really cheaper food—cheaper to grow, and cheaper to gather—but the adoption of a more natural and healthful diet will be slow. We very much wish that this treatise could help in producing such a result. Corn is good, but its misuse yearly ruins many thousands of horses, to our certain knowledge.

In the first place, then, a horse is not a camel, with a whole row of stomachs, calculated to hold provision against a long siege. Relatively to his size, and the work required of him, the stomach of the horse is small and it is sure to be empty in a little more than four hours from the time he filled it. As a consequence of this, if the animal is kept at work, or is deprived of food for a much longer period than this, he is first attacked by a voracious hunger which would lead him to eat too much, and hurt himself if he had a chance, and this in turn, with further delay, is followed by lassitude and exhaustion. The whole frame feels the evil effect, and any particular part is more liable to "strain," if at work, but the stomach is particularly affected, and the appetite is often so destroyed, temporarily, that the most tempting food is rejected. It follows from this that the horse should be fed not only regularly but frequently. A man can go much longer without food than a horse, and with much less danger of bad consequences. Still, even this must necessarily be at the mercy of circumstances, and we can only give the general rule of "morning, noon and night," and oftener if the work is hard, or the speed demanded, great.

Thought should next be given to the peculiar temperament, size, health and *habits* of the individual horse to be fed. There is here an infinite variety, and a great deal depends upon education. A horse will accustom and adapt himself to almost anything, except starvation, if he can take his time to it, but due allowance must be made for the force of continued habit, and for the consequent condition of the system. Too violent changes are never advisable, even

when the animal is off his work, much less when he is busy.

The next thing to be thought of, while never losing sight of the others, is the kind and amount of work that is being exacted, and for which the horse must prepare himself. The same kind of food will positively *not* provide for all the requirements of the frame of the working horse; he needs a variety as much as a man does, and he cannot be kept permanently useful without it. How often has every horseman seen his four-footed friend turn from the best of grain, corn or oats, as it happened, to nibble greedily at even inferior hay, while on the other hand all men know that the horse kept long on hay alone becomes exceedingly hungry for grain, no matter how abundant his other food. Too great a sameness is a very general fault in our methods of feeding, and we suffer the consequences in many ways.

There is very little danger that a horse will become too fat if steadily worked, and his food should at all times be so regulated as to keep down any such dangerous tendency, but, except in some few breeds, or exceptional cases, it is a mistake to suppose that "**good condition**" implies an approach to the "**living skeleton**" style of development. "**Not fat but full**" is a good proverb for a working horse, whether under the saddle or between the shafts. He needs a fair supply of both hay and grain, and these also may be profitably varied from time to time, with such additions or changes in the way of cut roots, cooked stuff or green food, as circumstances may suggest or permit.

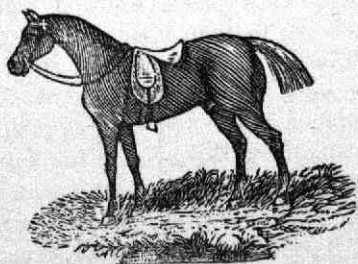
The only seasoning a horse cares for is a little salt, and he will eat less of this if it is always where he can get at it than if supplied to him at long intervals. It may be sprinkled on his hay, which is the most wasteful method; it may be put in his water, not to exceed an ounce a day; or it may be fed at intervals in the shape of fine salt, according to judgment. A better way than either is not often practicable in this country: it is to put a large lump of rock salt in the manger, and let the horse help himself by licking it. Some will use more than others, but the most "salt-hungry" will eat less than half a pound a month.

A horse will oftener hurt himself with water than with food, because he can get down a larger quantity in a shorter time. In a state of nature it may be that he can take care of himself, though the collections of skeletons around Western pools and springs would argue the contrary, but in his domesticated condition the horse requires to have his appetite for "drink" regulated by human reason and experience. With water, as with food, the supply needs to be regular and frequent rather than large, and the oftener a horse is watered the less he will drink in the aggregate. Still, some horses need more water than others, and the same horse will vary very much in his requirements at different times, and under different circumstances. Just before hard and heating work, or just at the close of it, only a moderate supply should be given, but at night, after the animal is thoroughly cool, he ought to have just as much as he cares for, and the amount he swallows may be noted as indicating his internal condition. Fever of any sort will have the same thirsty effect on a horse

as on a man. If a horse is being changed from dry food to green, it will be well to diminish his water at first, as a full supply will be apt to bring on a fit of colic.

As to *quality*, the water given to horses should be the **very best** that can be obtained in the place where you are, and, if it is mixed with vegetable or earthy matter, it should be filtered or settled if possible. By no means give cold spring water to a horse **warm from his work**, unless you have a spite against him, as it is apt to be an exceedingly dangerous experiment. Let it stand awhile, or even take the chill off with a dash of hot water. Of course it should not be warm to the touch or taste, all that is necessary to prevent a shock.

In some "**fancy stables**," now-a-days, arrangements are made for a continual supply of water in each stall or box. There can be no objection to this plan so long as the water troughs are kept very clean, and *no horses are kept*. If the latter is intended or attempted, the animals should be cool, and not at all thirsty when they are led in.



CHAPTER NINTH.

STABLING AND GROOMING.

GROOMING AND CLEANLINESS—PERSPIRATION AND SCURF—RUBBING AND BRUSHING—MUD, WET LEGS AND WASHING—HOOFS AND HEELS—COOLING DOWN—SHEDDING THE COAT—THE FETLOCKS—THE HOOF IN THE STABLE—PREPARATION FOR SHOEING—WET FLOORS AND "THRUSH"—EXAMINING THE SHOES—EXERCISE.

ONCE fairly bought, brought home, and properly stabled, the horse has passed a very serious ordeal, but other and most important duties at once press themselves upon the humane and economical owner. Frequent bathing, cleanliness, goes further with even a man than one man in a hundred knows enough to acknowledge, but the careful grooming which answers the same purpose for a horse is of even greater importance. A well "dressed," well groomed horse, will go further in work on less food, in better health, with less liability to damage, and come out of it in better condition, in all odds, than his carelessly treated neighbor. In fact, more than half of the diseases, and the worst results of more than half of the accidents, including overwork, bad judgment, changes in the weather, careless feeding, and all that, can be robbed of their most pernicious effects by judicious painstaking in the stable. This point is to be urged the more earnestly here, because bad and careless grooming is a prevailing vice among American horse owners, especially the farmers, and in the West and

South we have been personally cognizant of a most lamentable waste of horse-flesh in this way. Good stable management includes a multitude of separate items, some of which have been already referred to, incidentally, and more that cannot be brought within the scope of this chapter, but we must positively insist on certain points.

The cases are certainly exceptional in which the stable, however poor it may be otherwise, cannot be well drained, dry and clean when the horse is led into it, and there are not many places in America where the absence of good litter does not imply laziness and shiftlessness rather than any kind of economy. If by any accident it does mean economy, it is of the meanest and most shortsighted kind, assuredly defeating itself in more ways than one.

If then the stable is made dry and clean, so should the horse be. His skin must be kept pure. In **sweating** he exudes a matter which at once dries and forms scurf, and this is a mechanical obstruction to the free action of the pores of the skin, and even if he has not been sweated so as to make it visible to the eye, his "insensible perspiration" has certainly rendered **brushing and rubbing desirable**. It is not a mere surface polishing that will answer all the ends required; the effect is to be produced not upon the hair, but upon the cuticle itself.

The wild horse, or the tame one, when he is out at grass, may have a rough-looking coat, but the very winds to which he is exposed do his grooming. When he is kept in the stable all the time he is not at work, artificial means must take the place of natural ones. The action of the skin, its secretions of the necessary

oily matters, the delicate machinery of perspiration, must be kept in healthy activity, or nature will avenge herself speedily by colds, coughs, and other disorders. Any one will be willing to admit that a horse needs especial care and vigorous grooming when he comes in wet, muddy, or dusty either, from long and wearisome exposure; but fewer take the trouble to think that the horse who has done no work, has not even had exercise enough to stretch his legs, needs a good rubbing quite as much, if only by way of exercise.

If you are to be your own groom—and, even if you do it by proxy, you had **better give the matter some personal attention**,—begin by taking note if your horse has a thin, tender, delicate hide, or whether his epidermis is of the rhinoceros kind. The latter will need less manual dexterity but not less vigorous rubbing. Upon this too will greatly depend the nature and use of your currycomb and brush, and here a trifle of humanity and good judgment is to be exercised. Do *not* run a “hand-harrow” over a delicate and shrinking skin, and, on the other hand, be sure you get at the roots of a coarse, thick coat of untrimmed hair.

Begin at the head, with your brush in one hand and your currycomb in the other; take particular care of the ears, where dust is apt to gather; go down the neck, shoulders, bosom, legs, and so on back, with the brush only, and then repeat on the other side. Complete by going all over with a wisp of clean straw, a little damp. In the spring and fall, when the coat is changing, only rub with a cloth or some straw, if you want your horse

to look well afterwards. **Do not misunderstand the use of your currycomb**; it is for mud, obstinate bits of dirt, or any outrageously neglected coat; otherwise it is worse than useless, as your shrinking horse will plainly tell you. A damp sponge should be used for the horse's eyes, nostrils and *anus*, and these should be dressed out with a light and rapid hand. The **legs and feet** require especial attention. No matter how wet they are, they should be washed clean, and all foreign matters picked out of the hoof. The heels should be left clean and dry, so that draughts of cold air may not superinduce chapping or scratches. The more delicate points of grooming are only required in those stables whose wealthy owners are able to secure the services of trained professionals, but even these gentlemen will lose nothing by an hour among the quadrupeds to see if all is done that is professed to be.

When a horse is going out to his work, give him a quick rubbing down with wisp of straw. Not only will he start off better looking, but, what is of more importance, in better temper and with a glow on him which better fits him for the possible changes of temperature.

Grooming when a horse comes in from work, or any kind of violent exercise, depends a good deal on his external condition, but it should be done, if at all possible, before he feeds. The reason of this is, not only will he take his feed better, but all possibility of danger to him from eating or drinking will be over by the time you have done with him. If he is dry and clean, and not at all warm, a rub with a whisp of straw for a few minutes is all that is required.

If it is warm weather, and he is sweating profusely, lead the horse about gently, till he is quite cool. If he had a saddle on when he came in, let it stay on till he is cool, or he may have a stiff back next day. If it is cold weather, and he is warm, take him under shelter at once, and rub him dry with a cloth. By no means let the skin remain full of dry sweat, as this clogging of the pores practically defeats all their purposes. **Washing**, even with soap and water, is as good for a horse as for a man, but care should be taken with the one precisely as with the other, that the skin is thoroughly dry and bright when the work is done.

If, as very often happens, a horse comes in very muddy, it is a cruel sort of laziness to let him stand and dry with it all on, trusting to brooms and comb to tear it all out after it has thoroughly hardened. The black soil of the prairies sometimes makes a particularly hard and tarry cake if allowed to stiffen in the hair. The really easiest and cheapest way is to give the animal at once, a thorough washing and drying. It may be disagreeable, but it will pay. In fact, hardly anything else in the management of the horse will really pay better than simple cleanliness.

If a horse is merely well wetted by rain, simply rub him dry, as if you had washed him yourself, and make sure that his feet are all right and not stopped with mud or gravel.

If a horse is brought in completely used up, even if there is danger that he has been injuriously or fatally over-driven, the first, best and only thing to do is to cleanse him and groom him thoroughly. It is his best chance and he will enjoy it immensely. Rub every joint

in his body. Rub every inch on his skin. Rub his ears gently. Have some gruel made, if he is really badly off, and rub him while they are making the gruel. If he is injured his ears will show it by their low temperature, and he will be especially pleased to have them rubbed.

“**Grooming**” may be described, somewhat imperfectly, as the care of the horse’s skin and “**coat,**” and it includes some other cares besides cleanliness, important as that is: among these in some stables are “**clipping and singeing,**” in neither of which, we hope the readers of this treatise will indulge. Very surely they will not, except they happen to be proprietors of strictly “**fancy stables,**” caring more for externals than anything else. Still there is something more to be said about the coat of the horse. He so accommodates himself to varieties of climate and even to the more minute variations in the care taken of him, that purely general statements concerning his shedding or “**moulting**” would necessarily be true only within very narrow limits. Any description, therefore made and adapted to one locality, may be adjusted, with a mere trifle of experience or inquiry, to any other.

The coat of the horse, except in extremely warm countries, is changed twice a year. The long hair of winter comes off in April or May, according to the weather or warmth of the stable in which the horse is kept. Work, especially such as to produce perspiration, hastens the shedding. The hair on the legs is slower by some weeks, in coming off, perhaps because these limbs are more exposed. Even here it can be hurried a good deal by grooming. Different breeds of horses, and

different animals in the same breed, show very marked variations in the nature of their summer and winter coat, and with some the change is very slight. The difference is always less perceptible among blind horses, odd as that may seem.

Along in October, earlier or later according to climate and the character of the season, the summer coat begins to come away and the "**winter coat**" begins to make its appearance. The latter will often continue growing until midwinter, and its hairs are longer, coarser and closer than those they have displaced. On the legs the change is more distinctly manifest than on the body, presenting what is called a "**feathered**" appearance. In the case of race horses, or perhaps some others in exceptional situations, there may arise a necessity for artificially trimming and reducing this provision of nature, but in ninety-nine cases out of a hundred it will be wiser to let it alone and put your scissors to some other use. We are aware that some very respectable authorities have written differently, but we bear in mind that they were not writing for American readers or the climate of the United States, while *we are*.

Some stupid grooms, even some writers on farriery, will tell you to clip or singe the long, bristly hairs about the eyes, nostrils and ears, but be very sure that **you do not do it**, for they are in each case **feelers** attached to nerves of sensation, and are of use to the animal in warning him of the nearness of solid substances when he is groping in the dark. Any other **unsightly growth** about the head or neck may be freely trimmed away.

The **fetlocks**, if any care is to be taken of the horse's feet, may be trimmed reasonably close, unless he is to be worked in the plough, or otherwise, in soft and treacherous ground. If this latter is the case, by no means cut the fetlock close, as it is a natural protection against sudden blows, irritating friction and other exposure, and the foot will be all the better for it. Neither the mane or tail should be meddled with except by somebody who knows how to cut them, that is, an experienced groom. If a man is bent on trying his own hand, however, let him be sure that his scissors or knife are strong and sharp, and that his own hand is firm and steady, for horsehair is tough cutting.

A very important part of stable duty, and one which is very commonly neglected, is the proper care and supervision of the **horse's feet**. Constant attention is required, but if it is only made a matter of habit it need not be irksome or unpleasant. That which is a "matter of course" is rarely a matter of toil.

It is a great pity that so many of our blacksmiths are so ignorant of their business, but a great deal may be done, in the stable itself, to counteract the results of their folly. For most points we must refer the reader to the chapter on "**shoeing**," confining ourselves just now strictly to our "text."

Earth floors, if dry, well cleaned and drained, would be the best for a stable, but as they would involve considerable care and labor, some harder material, almost universally hard wood, is substituted for nature's provision for the wild horse. Now, wood is a bad conductor of heat, and the shod hoofs feel nothing cool or yielding under them. So, if neglected, they become dry,

hard and brittle, liable to crack in work, or to chip off in shoeing, or to "**batter**" badly on stony roads or pavements. To prevent this, a good horse-keeper will give the feet a "**stopping**," every now and then, say once a week; that is, he will take a bit of shingle, and paste the hollow of the hoof full of mud and cowdung mixed, and leave it there all night. If that don't succeed, try the dung alone, or put a little salt in your mixture. The last will *never* fail, but it must not be tried except in cases of extreme dryness, as it is too strong for safety on any ordinary hoof. Even if the horse's feet do not show any signs of dryness, always give them a good "**stopping**" the night before he is to be shod, so that the hoof may be tough and yielding instead of hard and brittle, in the hands of the farrier.

In carelessly kept or badly located stables, like too many that we now recall, disgraces to their lazy and reckless owners, the horse's feet are kept too wet, and the soft part of the sole of the foot becomes diseased, the outer coating of the frog becomes decomposed, discharges filthy smelling matter, the frog wastes away, the protection of the sensitive organs beneath is gone, and this is what is called a "**thrush**." There are other kinds of thrush, brought on in other ways, but this is bad enough. It is not always hard to cure, but prevention is better. This can be secured by having **dry litter** for the animal to stand on, and by keeping the frog of the foot scraped clean from foreign or dead matter. Leave any **cutting to the farrier**, but be sure the frog is in good condition.

One of the stable duties is to take a good look at the shoes whenever a horse goes out or comes in, to see

if they are firm, and none of the clenches of the nails are raised. Of course a horse is never to be worked with a loosened shoe, as he runs all sorts of risks, and so does his rider or driver.

Never keep a horse long in the stable without **good exercise**: he cannot keep in good health and condition, nor will he work with any safety to himself or others, on being suddenly released from his undue confinement.

As to the temperature of the stable there has been a good deal more controversy than sound thinking. It is a matter which cannot be altogether controlled, and it is *best* that it should be permitted to vary, steadily, with the season. This will take place in the process of ventilation, while many precautions can be taken against changes that would be too sudden or excessive. With good ventilation the stable can always be kept warmer in winter, and cooler in the greatest heats of summer, than the outside air, and this is what is required by the constitution of the horse. At all events, attend to the ventilation first and the temperature afterwards. If it is too cold, do not shut out all the air, but pile more clothing upon the horse.

With "stable vices," and the way to cure them, as well as the treatment of accidents, we will deal in another place, closing this chapter with the general remark that so long as humanity, thoughtfulness and good sense are allowed to kick laziness, brutality, and prejudice clean out of the stable, the horse population will have a fair chance for long, useful and comfortable lives.

CHAPTER TENTH.

PASTURE HINTS.

SOUNDNESS OF HAY OR GRAIN—GREEN FOOD AND SOILING—CHANGES OF FOOD—BAD WEATHER AND EXTRA CARE—SHELTER IN THE PASTURE LOT—WATERING IN PASTURE—FLIES IN THE FIELD—TAKING UP FROM PASTURE.

THE food of the horse in different sections of the country, and in the all but infinite variety of circumstances, in which he and his owners find themselves, must necessarily vary very widely, and with judicious management, the animal, of whatever breed, will adapt himself marvellously to all changes of locality or of season. We have already given some hints, and it ought to be unnecessary to add that, so far as is possible, each and every article should be sound and good of its kind. Mouldy or mowburnt hay is so much poison, and so is heated or mouldy grain. If corn or other grain is dusty or otherwise unclean, it is certainly a matter of but little trouble to winnow or sift it, and it is well worth while, as such food, if it does not originate diseases, is sure to foster or aggravate many affections of the eyes, nostrils, throat, lungs and bowels.

The great majority of our horses, leaving out those finally doomed to be used up in the relentless toil of our great cities, have at some time of the year a

chance for a little green food, either by soiling or by being turned out to grass, and this is an excellent thing, but it would be a by no means useless curiosity to inquire how many animals are badly damaged, or even destroyed, every year, by ignorance or carelessness in the way in which they are brought to or from their grass.

If a horse is to be **turned out to grass** in the spring, or for any cause at any time during the summer, care must be taken that the change from dry food and grain, with hard work and close confinement, to perfect liberty and green food in abundance, should not be too sudden.

Take some days to it. Cut down the allowance of grain. Bring in half feeds of cut grass. Some horses will be all the better for a dose of physic. At first, especially in the spring, or if the weather is bad, have your horse up to the stable at night and give him a **good grooming**. Don't neglect this latter, anyhow, if there has been a cold and pelting storm, such as we are generally quite liable to. You may require your horse's services at any time, and it is well to keep him somewhat under your hand.

Be sure that your pasture has some sort of shelter from extremes of heat or cold, of wind and rain. Let it be something better than a thin-leafed and shadeless tree, or the lee side of a mullein stalk or a rail fence. A close thicket of any kind, such as hazel bushes, sumach, canebrake, a rude shed, a mere shanty of poles and boughs, any sort of make-shift, if you cannot afford better, will be of real value before the season is over, and it *may* happen to save you your horse. A bald,

bleak, storm-swept, sun-beaten patch of hillside or of prairie, however good the grass or wide the limits, is no place to turn a good horse out into, if you expect to get him back in working trim.

If there is no running brook in the pasture, nor cool and shady pool of clear water, remember that there is as much of a necessity for abundant and regular watering as ever in the stable. The horse will drink somewhat less on green food than on dry, as a matter of course, but grass is no substitute for water. In localities where flies and other insects are severely troublesome, a coarse net of some kind will often be found an excellent investment. We knew an old fellow once, in the West, who even went so far as to put nets on his work oxen. He was well laughed at, but while the cattle of his neighbors kicked themselves thin and weak, his own remained in good trim all summer, in spite of even green head flies.

In taking a horse back from the pasture to the stable precautions must also be taken to accustom him gradually to the change of diet, whatever it may be. He will be almost sure to fret and worry at first, and his bowels require a good deal of humoring. He should by no means be put at once to his full allowance of work, and extra care should be taken in all the items of stable management. A few days of attention and his elastic constitution will once more settle fairly down to the ordinary routine of stable life and labor.



CHAPTER ELEVENTH.

THE HORSE'S FOOT.

CARELESS SHOEING—FEET OF WILD HORSES—SHOEING IN ANCIENT TIME—ARMY FARRIERY—NECESSITIES FOR PROTECTION—USES OF THE SHOE—METHODS OF ACQUIRING INFORMATION—PARTS OF THE HOOF AND THEIR USES—WASTE AND INJURY—MACHINE-MADE SHOES.

BEFORE attempting to treat of the management of the horse in work of any kind, there is one subject to be attended to upon which it would be difficult to say too much, or to say too minutely, and yet it is one to which, especially in the rural districts of the North, in the South and in the prairie country, an immense deal of the most culpable carelessness is prevalent. We allude to **Shoeing**.

It is a common superstition that the horse gets along admirably without shoes in a state of nature, and that his unprotected feet retain their health and perfection, although unaided by the care of the groom, or the science of the farrier. This is an absurd error, as the writer has ascertained from careful examinations of the hoofs of many wild horses. On soft ground, where they are not sufficiently worn the hoofs of the wild horse grow too long, this is apt to be merely a "summer complaint," rectified when the ground is hardened, and greater scarcity of food compels more

use of the feet. On the rough and flinty plains, over which droves of Indian ponies and mustangs are frequently compelled to journey at a good pace, their feet get sore and battered, just as if there was nothing "wild" about them. Like causes produce like effects everywhere, and neither men nor animals live as long, or multiply as fast in what is absurdly called a "state of nature" as when they are decently domesticated or civilized.

Perhaps any other part of the horse would get along better without care and supervision than his feet, and for many ages men have attempted, in various ways, to supply the needful attention. From the buffalo-hide "moccasins" of the Sioux and Comanches, only used on special occasions, to the patent india-rubber and steel appliances of the eastern States and Europe, innumerable are the inventions, and almost as innumerable the imperfections and failures.

With too many there exists only the simple idea, a matter of habit, more than of thought, that the horse ought to wear shoes, without ever giving any especial attention to the shape or condition of the particular feet in question, or to the kind or degree of use to be required of them.

"The shoes are to protect the feet."

Of course they are, but how and in what manner?

And here comes in a species of "conflict of ages." Time was when even the cavalry of great armies went unshod, and not unfrequently were reported at headquarters as utterly useless, on account of the condition of the feet of the horses from bad roads and over-travelling. In modern times the same amount of destruc-

tion is accomplished more gradually and more in detail, and the organized good sense, and the enforced education of army farriers, aided by surgical science, has secured for the cavalry horses of the world an incomparably better average of skillful shoeing than falls to the lot of their hardworked brethren in civil life. A vast amount of worse than useless inventive genius and would-be instruction has been wasted in contriving empirical systems by which all the feet of all the horses could be accommodated and adjusted to some given rule or formula, as if anything imaginable could be made to take the place of individual knowledge, care, intelligence and patience.

A very good rule to begin with in attempting any improvement in this direction, as in all others, is to "forget at once everything that you do not thoroughly know."

The **horse's foot** is to be protected, certainly, and from what? Let us see.

With only his own weight to carry, and that is a good deal, the feet of any animal are subjected to a degree of wear and pounding which is to be measured not only by the nature of the ground on which he is to travel, but by the rapidity of his motion, the peculiarities of his pace, and the innumerable circumstances which govern the condition of his feet themselves. When he is made a beast of burden or of draught, and nature's load is artificially increased, the wear and tear is multiplied, and the science of man is necessarily called in to provide as well as may be for the waste which the uses of civilization have occasioned.

Doubtless the first aim of the early farriers was to prevent the too rapid waste of the hoof, but a mere iron sole, while it wears away less slowly than the horn, communicates every shock and blow with rigid firmness to the complicated and delicate structure above it, and hence arose appliances, more or less effective, for the support of the yielding hoof, to prevent its spreading or cracking, to give it a firmer hold on hard or slippery ground, and to place its more sensitive and easily injured parts at a safer distance from blows and possible harm.

Thus much attained, or thought to be attained, and for ages the amount of further improvement has been small indeed, so far as the immense majority of cases is concerned, and we may now settle down to the belief that the only perceptible gain will be made in diffusing a more general spirit of inquiry and independence among horse-keepers and owners, with an equally general disposition to rebel against laziness, quackery and traditional prejudices on the part of the farriers.

With that end in view, and on behalf of our much abused quadruped friend and servant, we invite our readers to a careful study of the anatomy of the **horse's foot**. The diagrams which we present will give a very fair basis for intelligent inquiry, but hardly any number of "plates" will enable the student to dispense with living subjects. It will be very well to secure a knowledge of the technical names of the several parts of the machine, but that is not enough; who, nowadays, would trust his own body to the knife of a surgeon whose only

knowledge came from books, however theoretically excellent, without the truer and deeper schooling of the dissecting room?

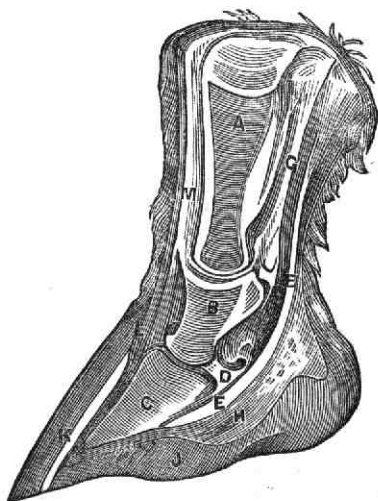


FIG. 1.—SECTION OF THE PARTS ENTERING INTO THE COMPOSITION OF THE FOOT AND THE FETLOCK AND PASTER-N-JOINTS.

- | | |
|---|------------------------|
| A. Os suffraginis. | H. Cleft of frog. |
| B. Os coronæ. | I. Side of frog cleft. |
| C. Os pedis. | J. Sole. |
| D. Os naviculare. | K. Crust. |
| E. E. The perforans and perforatus tendons. | L. Coronary substance. |

G. Inferior sesamoideal ligament.

Therefore, after learning what you can from our diagrams, lay down your book for awhile, and betake yourself to the study of living subjects. Your observations will consume little time and no money. Look sharply at the feet of every horse you come across, healthy or unhealthy: note their shape, if round or oval, and whether they are bright or dull; smooth, even and perfect, or rough, corrugated or battered. Get a clear conception of what a healthy foot should be, and then note the variations from that outline towards flatness, uprightness, damage or otherwise, for all these variations require corresponding changes in the purpose and design of the shoe which is required in each particular case.

So much for the outside, if you have used your eyes well, but that is only a good beginning. Now get a specimen foot from some dead subject,—no difficult thing to do, when so many poor brutes get through with their sorrows every day all about you. Take a saw and divide your specimen down through the middle, from toe to heel. Not a very pleasant job, but it will pay splendidly in all your after management of horses. Note carefully the position of all the parts, and their relative bearing upon one another. If the foot is a well-shaped and healthy one, you will gain one kind of information; if you detect disease and malformation, that also may be made exceedingly instructive.

If you have completed your study with respectable care you have done more than ninety-nine "farriers" out of a hundred, and know practically more than they do concerning the wonderful organ in whose torture and destruction they employ their misspent lives. At

all events, you are in a state of mind to acquire useful information from this and other books, to correct mistakes, it may be, and to reject crochets and fallacies, such as all writers on the horse are sure to have, though, of course, none will acknowledge it. We will not, for instance.

Such an examination and study as we have advised, will convince the student that the horse's foot is a very admirable and wonderful machine, calculated to perform any reasonable amount of work if it is only kept in order, and also that its very perfection and complex arrangement make it by no means difficult to injure. It will be found that the outside line of the sole of the foot would not vary much from a circle, in a sound and well-shaped foot, if continued around, but a little fuller on the outside quarter. Noting particularly this outside crust, most horsemen will tell him that it will be softer and less durable if of a light color than if dark,—a very ancient superstition which has led to the sale of many excellent horses at less than they were worth. The hoof should be bright and smooth, as these are indication of health and good usage, and they should be kept so, but as for color, except as a matter of taste, it does not matter, so long as sky-blue and bottle-green do not become too common.

The **sole** should be concave, and not too dry and hard, and it should be remembered that the crust, of which the iron shoe is a sort of continuation, is intended as a protection for this as well as the unseen parts of the foot. Concerning this we can hardly do better than to quote from that ancient and eminent authority, "Youatt on the Horse," as follows:

"The **crust**, or **wall**, is that portion which is seen when the foot is placed on the ground, and reaches from the termination of the hair to the ground. It is deepest in front, where it is called the toe, shallower at the sides, which are denominated the quarters; and of least extent behind, where it is termed the heel. It is placed flat on the ground, but ascends obliquely backward, and possesses different degrees of obliquity in different feet. In a **sound hoof**, the proper degree of slanting is calculated at forty-five degrees, or the fourth part of a semicircle. When it is more oblique, or the crust is said to have "**fallen in**," it indicates undue flatness of the sole, or, if the obliquity be very much increased pumiced, or convex sole; if it be more upright than the angle we have mentioned, it shows a contracted foot, and a sole too concave; so that there is no necessity to take up the foot in order to ascertain either of these states of it. It is also of importance to observe whether the depth of the crust appears rapidly or slowly to decrease from the front to the heel. If the decrease be little, and even at the heel the crust is high and deep, it indicates a foot liable to contraction, and sand-crack, and thrush and inflammation, and the pastern is upright, and the paces of the horse are not pleasant. If the crust diminish rapidly in depth, and the heels are low, this is accompanied by too great slanting of the pastern, and disposition to sprain of the back sinew; the foot itself is liable to be weak and flat and bruised, and there is likewise more tendency to that frequent but obscure lameness, termed the "**navicular-joint disease**." The foot has spread out too much at the

side, instead of growing upward, and therefore it is too much exposed.

“The crust in front is rather more than a half an inch in thickness, and becomes gradually thinner towards the quarters and heels. If, therefore, there be but half an inch for nail-hold at the toe, and not so much at the quarters, we need not wonder if horses are occasionally wounded in shoeing, and especially when some of them are so unmanageable while undergoing that process.

“While the crust gets thinner towards both quarters, it is thinner at the inner quarter than it is at the outer, because more weight is thrown upon it than the outer. It is more under the horse: it is under the inner splint-bone on which so much more of the weight rests than on the outer, and, being thinner, it is able to expand more; its elasticity is called more into play, and concussion and injury are avoided. When the expansion of the quarters is prevented by their being nailed to an unbending shoe, the inner quarter suffers most. Corns are oftenest found there; contraction begins there; sand-crack is seated there. Nature meant that this should be the most yielding part, in order to obviate concussion, because on it the weight was principally thrown, and therefore when its powers of yielding is taken away, it must be the first to suffer.

“A careful observer will likewise perceive that the inner quarter is a little higher than the outer. While it is thin to yield to the shock, its increased surface gives it sufficient strength.

“On account of its thinness, and the additional weight which it bears, the inner heel wears away quicker than the outer; a circumstance that should never be

forgotten by the smith. His object is to give a plain and level bearing to the whole of the crust. To accomplish this, it will be often scarcely necessary to remove anything from the inner heel, for it is already removed by the wear of the foot. If he forgets this, as he too often seems to do, and takes off with his knife or his butress an equal portion all round, he leaves the inner and weaker quarter lower than the outer; he throws an uneven bearing upon it; and produces **corns** and **sand-cracks** and **splints**, which a little care and common sense might have avoided. The crust does not vary much in thickness, until near the top, at the coronet, or union of the horn of the foot with the skin of the pasterns where it rapidly gets thin. It is in a manner scooped and hollowed out. It likewise changes its

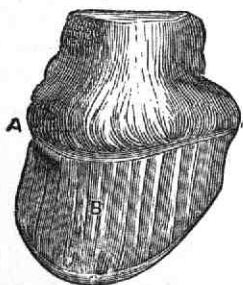


FIG. 2.—FRONT OF THE FOOT, WITH THE HOOF REMOVED.

A. Coronary substance.
B. Laminae.

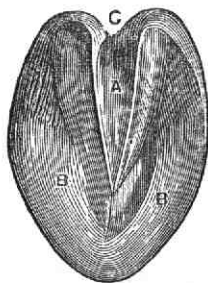


FIG. 2.—THE UNDER SURFACE OF THE FOOT.

A. Cleft of frog.
B. Sole.
C. Cleft between heels.

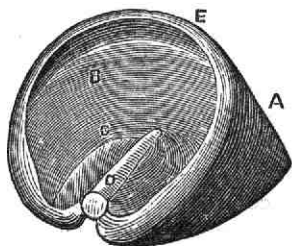
color and its consistence, and seems almost like a continuation of the skin, but easily separable from it by maceration, or disease. This thin part is called the *coronary ring*, and it receives within it, or covers, a thickened and bulbous prolongation of the skin, called the *coronary ligament*. This requires a better name, for it has not a portion of ligamentous structure in it. This prolongation of the skin is thickly supplied with blood-vessels. It is almost a mesh of blood-vessels connected together by fibrous texture, and many of these vessels are employed in secreting or forming the crust or wall of the foot. Nature has enabled the sensible laminæ of the coffin-bone to secrete some horn, in order to afford an immediate defence for itself when the crust is wounded or taken away. Of this we have proof, when in sand-crack, or quittor, we are compelled to remove a portion of the crust. A pellicle of horn, or of firm hard substance resembling it, soon covers the wound; but the crust is principally formed from this coronary ligament. Hence it is that in sand-crack, quittor, and other diseases, in which strips of the crust are destroyed, it is so long in being renewed, or *growing down*. It must proceed from the coronary ligament, and so gradually creep down the foot with a natural growth or lengthening of the horn, of which, as in the human nail, a supply is slowly given to answer to the wear and tear of the part.

“Below the coronary ligament is a thin strip of horny matter, which has been traced from the frog, and has been supposed by some to be connected with the support or action of the frog, but which is evidently intended to add to the security of the part on which it is found, and to bind together those various sub-

stances which are collected at the coronet. It resembles, more than anything else, the strip of skin which surrounds the root of the human nail, and which is placed there to strengthen the union of the nail with the substance from which it proceeds.

FIG. 4.—THE HOOF

- A. Outer surface of crust.
- B. Inner surface of crust.
- C. Upper surface of sole.
- D. Part corresponding with the cleft of the frog.
- E. Coronary band.



“The crust is composed of numerous fibres running at the toe in a straight direction from the coronet to the ground, but at the quarters, taking an oblique direction from the heel forwards. This construction is best calculated to enable the foot to expand when it comes in contact with the ground, and by that expansion, permitting the gradual descent of the bones of the foot, and obviating much concussion. The crust is thinner at the quarters towards the heels, because those are the parts at which the principal expansion must take place. These fibres are held together by a glutinous substance, but in such a manner as to permit a slight degree of separation, or to bestow the power of expansion on the foot; and when recently separated from the foot, it is an exceedingly elastic substance, and very tough, that it may not chip and break with the violence to which it is often exposed.

"In stable management, it sometimes loses much of this toughness, and becomes brittle and liable to chip and break. Inflammation of the internal part of the foot, by the increased heat which is produced, will cause brittleness of the hoof; deficiency of moisture and neglect of stopping will produce the same effect. Many horses are peculiarly liable to **brittle hoofs** during the summer; this is a very serious defect, and in some cases so much of the hoof is gradually broken away, that there is no hold left for the nails. A mixture of one part of oil of tar, and two of common fish oil, well rubbed into the crust and the hoof, will restore the natural pliancy and toughness of the horn, and very much contribute to the quickness of its growth.

"The **wall of the hoof** should be smooth and level: protuberances or rings round the crust indicate that the horse has had fever in the feet; and that to such a degree as to produce an unequal growth of horn, and probably to leave some injurious consequences in the internal part of the foot. If there be a depression or hollow in the front of the foot, it betrays a sinking of the coffin-bone, and a flat or pumiced sole; if the hollow be at the quarters, it is the worst system of bad contraction.

"The **inside of the crust** is covered by numerous thin horny leaves, extending all around it, and reaching from the coronary ring to the toe. They are about 500 in number, broadest at their base, and terminating in the most delicate expansion of horn. They very much resemble the inner surface of a mushroom. In front they run in a direction from the coronet to the toe, and towards the quarters they are more slanting from behind

forward. They correspond with similar cartilaginous and fleshy leaves on the surface of the coffin-bone, called, from their construction, sensible laminæ, or *lamellæ* (little leaves that have feeling), and the one being received within the other, they form together a most elastic body, by which the whole weight of the horse is supported.

“At the **back part of the foot**, the wall of the hoof, instead of being continued round, and forming a circle, is suddenly bent in. We do not refer to that bend which forms the cleft of the frog, but to a more sudden one, constituting the commencement of **the bars**. The bars are, in fact, a continuation of the crust, forming an acute angle, and meeting at a point at the toe of the frog: and the inside of the bars, like the inside of the crust, presents a continuance of the horny leaves which we have just described, showing that it is a part of the same substance, and helping to discharge the same office.

“It needs only the slightest consideration of the cut, or of the natural hoof, to show the importance of the bars. The arch which they form on either side, between the frog and the quarters is admirably contrived, both to admit of, and to limit to its proper extent, the expansion of the foot. When the foot is placed on the ground and the weight of the animal is thrown on the little leaves, of which we have just spoken, we can imagine these arches shortening and widening, in order to admit of the expansion of the quarters; and we can see again the bow returning to its natural curve, and powerfully assisting the foot in regaining its usual form. We can also perceive what protection these bars must form

against the contraction, or **wiring in** of the quarters. If they are taken away, there will be nothing to resist the falling of the quarters when the foot is exposed to any disease or bad management which would induce it to contract. Again, we see the security which they afford the frog; and the effectual protection which they give against the pressure of the lateral or side parts of the foot. Then appears the necessity of sparing and leaving them prominent when the foot is pared for shoeing. It is the custom with too many smiths to cut them perfectly away. They imagine that that gives a more open appearance to the heels of the horse; a seeming width which may impose upon the unwary. Horses shod for the purpose of sale have usually the bars removed with this view; and the smiths in the neighborhood of the metropolis and large towns, shoeing for dealers, too often habitually pursue, without regard to their customers, the injurious practice of removing the bars. The horny frog, deprived of its guard, will speedily contract, and become elevated and thrushy; and the whole of the heel, deprived of the power of resilience or re-action, which the curve between the bar and the crust affords, will speedily fall in. Therefore, when treating of shoeing, we shall lay it down as a golden rule, that the bars should be left prominent, and we shall show why it is of essential importance that the shoe should rest on the angle formed by the crust and the bar."

The **frog** is a triangular-shaped portion of horny and callous substance, growing between the "**bars**," of the foot, naturally coming about level with the crust, and intended to protect a softer and elastic substance,

inside, called the "sensible frog," an intention too frequently defeated by the itching which some blacksmiths have to pare it off, without rhyme or reason. Youatt says :

"In the space between the bars, and accurately filling it, is the **frog**. It is a triangular portion of horn, projecting from the sole, almost on a level with the crust, and covering and defending a soft and elastic substance, called the **sensible frog**. It is wide at the heels, and there extending above a portion of the crust; narrowing rapidly when it begins to be confined between the bars, and terminating at a point at somewhat more than half the distance from the heel to the toe. It consists of two rounded or projecting surfaces, with a fissure or cleft between them, reaching half way down the frog, and the two portions again uniting to form the point or toe of the frog. The frog is firmly united to the sole, but it is perfectly distinct from it. It is of a different nature, being softer, and far more elastic; and it is secreted from a different surface, for it is thrown out from the substance which it covers. Without entering into many of the questions which have been agitated, with far too much warmth among veterinarians, as to the uses of the frog, it is sufficient to refer to our cut, and consider the form and situation of this part. It very much resembles a wedge with the sharp point forward; and it is placed toward the back part of the foot. The foot is seldom put flush and flat upon the ground, but in direction downward, yet somewhat forward; then the frog evidently gives safety to the tread of the animal; for it, in a manner, ploughs itself into the ground, and prevents the horse from slipping. This is of con-

siderable consequence, when we remember some of the paces of the horse, in which his heels evidently come first to the ground, and in which the danger of slipping would be very great. We need only refer to the gallop of speed as illustrative of this.

“The frog being placed at, and filling the hinder part of the foot, discharges a part of the duty sustained by the crust ; for it supports the weight of the animal. It assists, likewise, and that to a material degree, in the expansion of the foot. It is formed internally of two prominences on the sides, and a cleft in the centre, presenting two concavities with a sharp projection in the middle, and a gradually rounded one on each side. It is also composed of a substance peculiarly flexible and elastic. What can be so well adapted for the expansion of the foot, when a portion of the weight of the body is thrown on it ? How easily will these irregular surfaces yield, and spread out, and how readily return again to their natural state ? In this view, therefore, the horny frog is a powerful agent in opening the foot ; and the diminution of the substance of the frog, and its elevation above the ground, are both the cause and the consequence of contraction : the cause, as being able no longer powerfully to act in expanding the heels ; and the consequence, as obeying a law of nature, by which that which no longer discharges its natural function is gradually removed. It is, however, the cover and defence of the internal and sensible frog at which we are not yet arrived, and, therefore, we are at present unable to develop its full use ; but we have said enough to show the absurdity of the common practice of unsparingly cutting it away. To discharge, in any degree, some of

the offices which we have assigned to it, and fully to discharge even one of them, it must come in occasional contact with the ground. In the unshod horse it is constantly so; but the additional support given by the shoes, and more especially the hard roads over which the horse is now compelled to travel, render this complete exposure of the frog to the ground, not only unnecessary, but injurious. Being of so much softer consistence than the rest of the foot, it would be speedily worn away: occasional pressure, however, or contact with the ground, it must have.

“The rough and detached parts should be cut off at each shoeing, and the substance of the frog itself, so as to bring it just above or within the level of the shoe. It will then, in the descent of the sole, when the weight of the horse is thrown upon it in the putting down of the foot, descend likewise, and pressing upon the ground, do its duty; while it will be defended from the wear, and bruise, and injury which it would receive if it came upon the ground with the first and full shock of the weight. This will be the proper guide to the smith in operating, and to the proprietor in the directions which he gives; and the latter should often look to this, for it is a point of very great moment. A few smiths carry the notion of **frog pressure** to an absurd extent, and leave the frog beyond the level of the sole; a practice which is dangerous in the horse of slow draught, and destructive to the hackney or the hunter; but the majority of them err in a contrary way, and cutting off too much of the frog, lift it above the ground, and destroy its principal use. It should be left *just above or within the level of the shoe.*”

The crust and the frog are seemingly all that the horse-shoer has to deal with, but it is easy to see that through them he can make himself felt for good or evil on the whole foot and the animal it belongs to. The crust is perpetually growing, and if a horse's shoes fitted him well at first they will be sure to become too small if kept on too long. Some authorities fix upon three or four weeks as about the time that a shoe should be worn without refitting, and this is perhaps near enough, but horses vary as much in the rapidity of the growth of their hoofs as men do in the growth of their nails, and arbitrary rules must not be allowed to take the place of experience and observation. Notice always how your own particular horse wears his shoes and how his hoofs grow, not expecting, even then, to find him always uniform in sickness and in health and in all species of work.

It is strange that it should ever be forgotten by either smith or owner that the horny crust of the horse's hoof must absolutely **not be used up in shoeing**, no matter how frequently that is done, more rapidly than the natural growth will make good. Carelessness of this principle is certain to produce lameness in one way or another, and the best you can then hope is that long rest and idleness will give the abused foot another chance.

The fibres of the horny matter of the hoof when once separated, will never again unite, nor can any sand-crack or other bruise or lamination be healed, otherwise than by protecting it from increase and waiting for the growth of the crust. From this it follows that the smith must not be permitted to use either knife or nails too

freely: the latter is too often lost sight of in shoeing for heavy work or hauling on pavements.

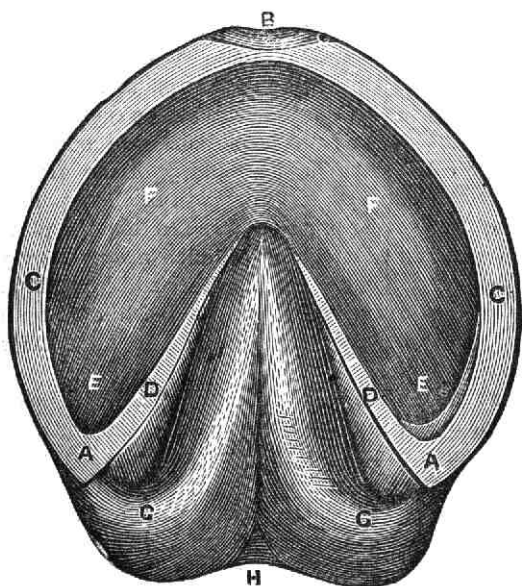


FIG. 5—A SOUND FOREFOOT PREPARED FOR THE SHOE.

- | | | | |
|-----|---|-----|---|
| A. | The heel of the crust. | EE. | The angles between the heels and bars where corns appear. |
| B. | The toe. | FF. | The concave surface. |
| CC. | The quarters of the crust | GG. | The bulbous heels. |
| DD. | The bars as they should be left with frog between them. | H. | Cleft. |

The greater part of the shoes at present used in this country are made by machinery, or rather, a species of "blank" is made which still requires especial skill and care in selecting and fitting it for use. There can be no doubt that the employment of machine made shoes is a great mechanical gain, as well as a saving in money in view of the very imperfect manner in which so many of our smiths have learned their trade, though at first it encountered a tremendous array of self-conceit and prejudice. Every smith, however, even to use to advantage a shoe made by another man, ought to be able to produce a perfect one with his own hands. How else can he be said to understand the principles involved, or how, even more especially, will he be able to select his shoes for the feet of any one particular horse, or provide for the local peculiarities which may be required by disease, deformity, weakness or special service?

Watch your farrier, and if he goes to work too recklessly, jerking off the shoes with a rude hand, check him. Crooked nails, if dragged rudely through the holes in the hoof, will enlarge them and the shoe will loosen more easily. The re-shoeing begins with the removal of the old shoe.

Note now, carefully, **the condition of the hoof**, and if there is a call for any other attention besides simple shoeing. If not, and all looks firm and healthy, don't have too much cutting done, but pare the crust and bars about down to the outer edge of the sole, without taking one shaving from the sole, the frog, or inside of the bars. Any loose matter may be scraped away, so as to leave the frog and sole clean and healthy.

The reason for this is that your object should be to reduce the foot simply to such a state as natural and healthy wear would leave it, if the horse wore no shoe at all, and then to fit your iron protector with a view to the further preservation, as far as may be, of that natural and healthful shape and condition.

The little inequalities left by the knife on the face of the hoof are removed by touching them with the hot shoe, but there should not be too much of this, as it softens and disintegrates the horn. A few experiments will convince you of this.

The number of nails to be used must vary somewhat, and that is a matter for the exercise of sound judgment, but they should be as few as may be, considering the work to be done and the hoof to be shod. For ordinary road work six will generally be found enough. The American editor of "Stonehenge," an English writer of value, has given some excellent hints on horse-shoeing, though it could be wished that he had said more rather than less. He remarks concerning his own custom:

"Now, take a horse whose hoofs have been slowly growing in length for a month, every motion of his body trained to accord, pull off his shoes, which will be found (owing to the forward growth of the hoof) farther from the heels than when first applied, pare away the crust down to the sole, cut out a big notch at the toe for a clip, set the new shoe back within the front of the foot (more on the forefeet, as they are supposed to grow faster), then rasp off the outer part of the toe back to the shoes, and clench the nails as tight as possible. This is a common mode of shoeing; his shoes are too

small for him: he swings into a trot with the usual body motion, but the feet, all shortened, fail their part, while the forefeet, diminished more than the hind, are not thrown out quite as far, and the horse, unaccustomed to the change, dwells too long on them to escape a blow from behind. Weariness and laziness will also cause forging, by a tardy movement in front, and stumbling, by a failure to raise the toe sufficiently to avoid scrubbing the ground when thrown forward.

“It is too common, especially in cities, among draught-horses, to use up the lower part of the crust too fast for its growth. If the human finger-nail be pierced with a fine needle in the manner of a horse-shoe nail driven through the crust of a hoof, it will be observed that the hole will remain, until the growth of the nail has carried it beyond the flesh; that is, the fibres of horn once separated will never unite. Horses used for heavy work are shod with heavy shoes, thick toe and quarter clips, high calks and steel toes, and either because of the severe strain on the stones, the weight of the shoes and nails, the leverage of calks and toes, waste of crust to accommodate clips, or of all combined, they require shoeing about once in three weeks, and frequently oftener. At each shoeing, a little more crust and sole is taken off of the ground surface, a few more holes made (or nails driven into old ones, enlarging the aperture by working about and bending under the clenching iron). The surface of the crust is again rasped, diminishing the thickness, new furrows made to accommodate the clenches, and the horn burned and softened by a hot shoe each time. The blacksmith will

insist that all these operations are necessary, but the fact is, he is using up material too fast, and we leave it to horse-owners to judge by experiment, how these operations may be modified. **The French method** of bringing the points of the nails out low down on the surface of the hoof, appears rational, as it destroys the vitality of the crust to a less degree than our custom, and leaves a greater proportion of sound foot to bear the shocks.

“Our practice has been, after removing the old shoes (with care not to enlarge the old holes by dragging crooked nails through them), to pare off the crust and bars well down to the outer edge of the sole, without taking a shaving from the sole, frog or inside of the bars. If the crust has not been broken by wear, this leaves the foot as near its natural shape as possible, and a shoe must be made to fit it. For roadsters, a narrow, light shoe is fitted to the crust in length and width, then made perfectly level, without twist or pritchell burs at the nail holes, and while sufficiently hot, slightly touched to the crust, to mark any inequalities that may have been left after paring. Six nails are used, three on each side, dividing the space from about an inch from the centre of the toe, to the centre of the quarters. The nail holes are set well back from the outside edge, and made straight through the iron: the nails are small smoothed off with a hammer, and slightly bevelled on one side of the point; the position of the holes in the shoe brings the nails out low down on the surface of the crust, but care must be taken to start them in the centre of the holes, that the foot may not be cramped or forced out of its natural shape. The projecting nail

points are filed close to the hoof, that they may be broken off without twisting the nail, or enlarging the hole in the crust; the nails are then driven up, and the clenches turned over and hammered down.

"No rasp has been used, no crust wasted by mutilation for clips, and but little injury by nail holes; if the nails be of good iron, they are sufficient in number, and the light clenches on a sound foot will hold the shoe perfectly tight, and will not cause abrasion of the legs in travelling.

"The foot presents what we might call a beautiful fit, the tender part of the frog is protected by the thickness of the shoe, while as it is renewed from within, the outside will be worn off by friction, and nature will keep it exactly low enough to obtain its necessary exercise; moreover, by driving the nails straight through the middle of the hole in the shoe, the foot will be free from that disagreeable, cramped feeling, we have imagined a horse to experience, when the nails are started at either side of the hole in the iron, forcing the more yielding fibres of horn to its centre.

"There have been many forms of shoes recommended by different authors, but few of which are used in this country. The French shoe has a convex ground surface, and the foot is fashioned to it, by leaving the quarters full, and the crust sloped off towards the toe and heels. Why the bearing should be taken off the heels we cannot imagine, and forcing the quarters to bear an undue amount of concussion would apparently induce quarter crack, but having had no experience with this shoe, we may be wrong in our conclusions.

“Another fashion imitates an old shoe worn off at the toe, which is certainly an advantage to roadsters, as it would be to us, if we could buy new shoes to fit our feet exactly like the old ones. Some writers advocate nailing the shoe only upon the outside quarter, or with but two nails on the inside, toward the toe, with the idea of allowing unimpeded expansion of the crust when the foot strikes the ground. Inasmuch as nails injure the crust, the practice of using as few as possible is wise, but we have been unable to discover any expansion of the anterior half of the ground surface in hoofs that have never been shod. A careful examination will convince any one that there is no mechanical necessity for such spreading, and from the nature of the organization of the foot, it is simply impossible; all the spring needful to the front of the crust is gained by the elasticity of its fibres. The line of bearing of the lower part of the foreleg, is directed behind the centre of the foot, and the yielding points of the frame work are the pastern, coronary and navicular joints; as the upper part of the coronary bone works backward and downward, it, with the action of the tendon, slightly spreads the heels laterally, and the whole crust partakes of the movement, diminishing in effect towards the toe; were the foot completely inelastic, the motion might be detected at the quarters, but the whole of a healthy foot is of a yielding nature; the fatty heels, in particular, may be compressed like cork, while the frog resembles a piece of india-rubber, and there is a spring in every fibre of the crust. These conditions so far distribute motion, that there is practically none in the ground surface of the crust forward of the centre.

“From the fact of this style of shoe allowing free expansion, its advocates proclaim it a **preventive of contracted heels** (which, unfortunately, is so prevalent among shod horses); but if, as we suppose there be no spreading of the front part of the crust by pressure, a shoe nailed only at, and forward of the quarters, will not interfere with any natural movement of the heels.

“This disease (contracted heels), appears to be an absorption or waste of a portion of the frog and fatty heels, accompanied by an undue secretion of crust at the posterior part of the foot, encroaching upon the province of the softer tissue of the heels.

“Many reasons have been assigned for this disturbance of the natural nutrition of the different parts, all or none of which may be correct, for no theory has yet been so clearly demonstrated and proven, as to leave the cause and nature of the disease beyond a doubt, but we have never known any tendency to contraction, in horses that have been shod in such manner as to allow the frog a fair amount of exercise, indicated by its position.

“An india-rubber shoe intended to be used as a cushion between the iron and the foot, has been designed, patented, and tried, within the last two or three years but we believe has failed to give general satisfaction. The rubber mashes out in a short time by concussion, and leaves a loose shoe. Good sole leather is much more durable.”

Those of our readers who choose to examine this author, will find much in it that is valuable in this country as well as much that is purely English in its application.

CHAPTER TWELFTH.

HINTS ON HARNESS.

HARNESS FOR WORK—BAD HARNESSING A WASTE OF POWER—FRICTION AND SORES—WOODRUFF ON PULLING—TRICKS IN WORK—RELIEF FROM HARNESS IN REST.

THE horse who has been well stabled, whether with or without any pretence to elegance; well fed, well groomed and well shod, may fairly be considered in a good state of readiness to be harnessed for his work. And here again it will be necessary to ask what is to be the nature of that work or use. We make and use in America the very best and the very worst of all possible horse furniture, and we have developed all sorts of doctrines concerning it. For our own part, we have no idea of attempting any incomprehensible scientific disquisition, but would simply suggest that the body of the horse is a sort of machine, and that the wagon or plough is another, and that if the former is a propelling power the main aim is to employ it with as little waste as possible. Good harness may be very badly put on, so as to seriously interfere with the amount of power which the horse can apply, and at the same time with his comfort and endurance. Moreover, recklessness of a few slight and inexpensive appliances, and a little care, when they are needed, on the shoulders, back and other exposed points, will often permit the creation

of unsightly and annoying if not obstinate and dangerous galls and sores. The first point to make here is, that the collar must fit,—that is, it must apply its surface as evenly as may be to that of the muscles upon which it is to press, and it should be as carefully stuffed and as free as possible from inside rigidity. The point at which the traces are attached should also be carefully selected so as to secure an even bearing. By this means, as will easily be seen, the collar is prevented from pressing with undue weight upon any one point, and the whole limb will be less rapidly wearied, while there will be much less danger of any abrasion of the skin. A good deal the same rule applies in fitting on a saddle, and, generally, wherever it is necessary that there should be much pressure or friction it should be as much as possible distributed over the surface and relieved by soft bearings. This is not even so much a question of humanity as it is of economy in working power. Its especial application can only be made to advantage with the horse and the harness both before you, but it should not be difficult then.

The horse and his harness should both be apportioned to the work to be done, and as a general rule it should be "heavy for heavy, and light for light." That this rule is not to be carried too far, however, is well known to all horsemen. No less an authority than HIRAM WOODRUFF remarks in that valuable and entertaining work, "The Trotting Horse of America."

"The ability to pull weight is a quality of exceeding value; and when it is found in connection with speed and stoutness, we may say that the three prime characteristics of the harness horse are obtained. It is

to be remembered that the ability of which I speak is that which can pull at a great rate; so that putting on extra weight, up to a reasonable point, should make no very great difference in the performance of the trotter. Almost any horse can pull a moderate weight at a slow pace, on a good road, but those who can take along about four hundred pounds and keep the pace for two or three miles, are, and always have been, rather scarce. There is a great difference in the ability of **fast trotters** in this respect; and the common notion that a great bulky horse is best calculated to do so is a fallacious one. For a draught horse, great size and bulk, to throw an immense steady strain into the collar, may be valuable, but when the weight is to be taken along at a great rate, other things are of more importance than mere size. In the first place, then, as to height, I do not think that a tall horse has any advantage in this regard over one about fifteen hands and an inch, or fifteen hands two inches high. The tall horse is apt to be leggy, and his height often comes from extra length in the canon bones, which multiplies no power. Length in the arms, shoulders, thighs and haunches is a different matter. It follows that the extra height of a horse may be rather a disadvantage than the reverse, in regard to pulling weight at a fast rate.

“Mere bulk is also useless. Everybody must have seen horses, big enough to pull a ton, to look at, and able to trot fast in a sulky or to a skeleton wagon, but unable to act to advantage to three or four hundred pounds. The **weight-pullers**, as a general rule, are of medium size, with a fine, quick stroke, not overlong, and they bend the knee well. They need to be spirited

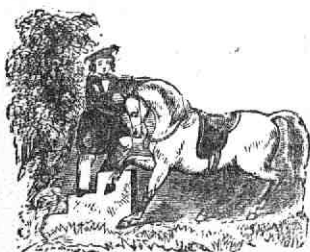
goers, keeping well up to their work all the time; and, unless their temper and pluck are both good, they will sulk, or give up from faint-heartedness when they feel the weight and the speed begin to tell. But though mere bulk is useless for the purpose, a fair amount of substance is required, and it will be found in nearly every case that, though the weight-puller may not have a large frame, he possesses a large muscular development. Long striders are seldom good at weight. Being greatly extended, with a load behind to be pulled along, they are unable to recover and shove their haunches in quick, without extra exertion, under which they soon tire. Here they more than lose in time of stroke what they gain in space, and loiter, so to speak, in their action."

The great trainer is speaking more especially of fast stock and trotters, to be sure, and it is a point to be made to best advantage, in some respects, when you are buying, but is by no means devoid of value when you come to consider the important question of work and endurance, and what you are to expect of such stock as you may have.

If now your harness is easy in its fit and is well adjusted, if your traces pull evenly, and every strap and buckle seems to be in its place, you are in a fair position to discover before long, what tricks your horse may have in work, if you do not by careful thinking also discover that you as a driver are the more faulty and vicious animal of the two. That the latter is generally the case, a somewhat extended observation strongly inclines us to believe. A great difficulty is that both with men and with horses the worst defects are of inborn temper

and of ingrained habit, and are exceedingly difficult to cure. These will be more particularly dealt with in the chapters on breaking and training. Much also that pertains more especially to the saddle horse will be reserved to a more appropriate place.

Both as to harness or saddle, however, please bear in mind that when your hour of rest comes and your quadruped servant is also permitted to get his breath and his food, you cannot do him a more refreshing favor than to off with the leathers, etc., against which he has been pulling. He will be worth all the more for it when you start again, especially if you will give him a quick rubbing with a whip of straw. With horses nothing really pays so well as thoughtful kindness.



CHAPTER THIRTEENTH.

STABLE TRICKS AND VICES.

STALL KICKING—WEAVING—TEARING THE CLOTHES OFF
—VICIOUS TO CLEAN—CRIB BITING—WINDSUCKING—
REFUSING TO LIE DOWN—PAWING—QUIDDING—ROL-
LING—BITING.

IF there is one point more than another at which the horse most strikingly develops the analogy between his own character and that of his human master, it is in the ease and readiness with which he acquires, especially while young, an endless variety of tricks and vices, small and large. Whatever these tricks and vices may be, it is of the utmost importance to know them all, for the horse clings with much more than human obstinacy to anything which he has once learned. Some of them are of very little account; some are only vexatious and annoying; while others, by no means few in number, tend to render the animal who has acquired them, more or less unsafe, and some constitute positive legal unsoundness.

The gradation from mere trick to disease and legal defect is sometimes slight and hard to follow, as will be seen, but both in buying and afterward in keeping there is a good deal to be guarded against and accomplished by watchfulness and precaution.

Attention is first to be directed to what may be called "**tricks and vices of the stable.**"

Prominent among these may be named "**stall kicking,**" a habit which may be acquired by any horse, at any time of life, but which, once formed, is extremely difficult to cure. With some horses it comes and goes, at irregular intervals, as a sort of intermittent ugliness, a return of which is very apt to be brought on by flies, undesirable neighbors, a strange stable, or other circumstances.

By no means play with or in anyway tease your horse in the stable, unless you wish to teach him to kick, for it is not always the horse's fault or a sign of original bad temper. In this matter mischievous boys will sometimes be agents of a good deal of harm if allowed the run of the stable. Mares are more liable to this vice than geldings, and they are always worse at the beginning and end of their time of being "in use," and those who are very good and quiet at other seasons will then become, at times, perfectly outrageous, and must be forcibly restrained to prevent their doing themselves harm.

Kicking horses not only make their stalls dangerous places to enter or work in, but are very apt to be perpetually laming themselves more or less severely. When a horse has just begun to acquire this habit it may do some good to fasten thorn bushes or other prickly things where his legs will be sure to strike them and he is apt to make up his mind that "it is hard to kick against the pricks." A severer remedy is to attach a long, heavy piece of wood to a chain and buckle it above the hock so that it will hang about half way down

the leg. If he kicks against this he hurts himself, and will generally stop for that time. This is not a safe experiment with spirited or obstinate horses, who may do themselves serious injury before they will give up. Few horses kick with both feet at once in the stable, and a pair of hobbles buckled at the hind fetlocks will in most cases compel quiet as long as they are worn. Some writers recommend a narrow strap buckled tight just above the hock, as it will cause great pain if the horse tries to kick with it on, but it hurts even worse if he tries to lie down, and should not be tried till other expedients have failed. In very bad cases, tying up the foreleg is often resorted to, but this, of course, cannot be continued and is only less annoying to the horse than the vice itself.

Some horses will stand in the stall with a perpetual swaying motion of the head from one side of the manger to the other, as if the restraint was unendurable. This is **weaving**, and is peculiar to animals of an irritable nervous system. It does no special harm of itself, but it is an indication of a fretful disposition. It cannot be cured.

Many horses, of a similiar organization to those last named, can hardly be induced to bear any covering on them in the stable, and where it is desirable that they *should* be clothed, their habit of tearing off everything that can be put on them is an ugly one. "Stonehenge" says:

"**Tearing the clothes off** is by no means an unusual stable habit, and it is one very difficult to cure. There are two effectual preventives, however: one of which consists in the regular employment of a rough

horsehair cloth, made like that for hops, outside the rug, and which is so disagreeable to the teeth, that no horse will attempt to tear it; the other is carried out by means of a pole of ash, about three-quarters of an inch in diameter, with an iron eye attached to each end. One of these is fastened, by means of a short leathern strap and buckle, to the side of the roller-pad, while the other has a strap or chain about a foot long, which attaches it to the head collar. The pole should reach about fifteen inches beyond the point of the shoulder, and it should be fixed on the side which is generally uppermost when the horse lies down, so as not to be under him in that position. It is a very simple and cheap apparatus, and any village blacksmith can make and apply it."

There is a very great difference among horses in the relative tenderness and sensitiveness of their skins, and, while some will hardly deign to notice even the whip, others will be driven half crazy by the touch of a fly. A little disregard of this in the beginning of his training will frequently make a horse that is very good-natured, every other way, **vicious to clean**, so that it is as much as a man's life is worth to come near him with a brush and comb. It is doubtful if this vice is ever the animal's own fault, for horses generally are inclined to take kindly to gentle and skillful manipulation, and so true is this that a cure may generally be effected by frequent dressing with a light hand and a soft brush or cloth.

Crib-biting, as it is called, is apt to be or become a very serious matter, not only to the manger and the food in it, but to the horse himself. It is destructive of

the teeth, in the first place, and it may be regarded as both a cause and an indication of such a state of the stomach as renders the horse more than usually liable to colic.

In **crib-biting** the horse seems to desire some "**fulcrum**," so to speak, for the muscles of the neck to work on while endeavoring to discharge wind from the stomach. He seizes the manger or other available object,—it may be a fence rail,—with his teeth, stretches his neck, appears to "**choke**," or work the muscles of his throat, and then follows more or less of "**grunting and sucking**." Crib-biting horses are frequently very good workers, though apt to be thin, but they are subject to ugly colic turns, and by reason of the extra wear they give their teeth are likely, not only to look older than they are, but also to actually *be* older, so far as use and endurance are concerned.

Although it is a common opinion that crib-biting is the consequence of a disease of the stomach, we are inclined to consider it, in the first place, at least, as much a habit as tobacco chewing is in man. It is very contagious, and if one horse in a stable has it the rest are pretty sure to follow him. Other "diseases" will yield more or less to medicine, but this will not, and it is of no use to turn the horse out to pasture. So long as a fence rail is to be had to gnaw on and strain against, the confirmed cribber will not at all miss his manger. Various causes have been given for the formation of the habit, but only two seem reasonable: imitation and idleness. One horse will do what he sees another do, or if he is tied too long uselessly in his stable there is no telling what he will not do, with teeth or heels.

A common "**preventive**," but which is by no means a "**remedy**," is to buckle a leather strap so tightly around the neck, just behind the jaw, that, when the horse attempts to crib, he tightens the muscles of that part, and these being pressed against the strap occasion such pain that the act is not completely carried out, and even if it is, the first time it is tried, the horse remembers the unpleasant feeling, and hesitates to repeat the dose. In ordinary cases the strap is left comparatively loose, so as not to prevent swallowing with ease, or to check the flow of blood from the head, through the jugular veins to the body. Greater tightness, which alone is of any avail with confirmed cribbers, has a tendency to produce other difficulties of head, throat and lungs, and is of little value.

It is of no use to coat the manger with tin or wool or tar, the "**cribber**" will soon get used to them all, and cast iron, if it were there, would only give him a better chance to destroy his teeth.

There are but two entirely thorough and effectual cures for crib-biting, and no others need be bothered with. The first is a box without a manger, or any other bar for a horse to put his teeth on, and in which the feed, of whatever kind, is placed on the ground. This may waste some food, but the prevention is perfect. The second is the "**bar-muzzle**," of which there are several very good patterns, consisting of an iron frame-work, covering the lips and nose, and suspended from the head by a leather head-collar, so that the lips can reach the corn or hay, but the teeth cannot get at the edge of the manger. There is no harm in this contrivance, except that is likely to lengthen the time

consumed in feeding. That, however, is no disadvantage to either horse or man.

Some horses seem to be taken at times with a crazy desire to **devour their litter**, but this is not a permanent vice and can generally be readily cured. It implies that the horse has been kept short of hay, or what we call in the West, "roughness," or that he has been stabled too long. A temporary "preventive" is thirst, caused by salt or otherwise, which will prevent his longing for the dry, coarse litter, but a *cure* will be found in green soiling or a vacation on good fresh pasture land.

"**Wind-sucking**," says Youatt, "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 head drawn inward; 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 shall prick him whenever he attempts to rein his head in for the purpose of wind-sucking."

A bad habit for any horse to acquire is that of **not lying down**. He is apt to be troubled with **swelled**

legs, and his fault tells severely on his pluck and endurance on a journey. Moreover, it is sure to aggravate any tendencies he may have to weakness or disease in his feet and legs, for very obvious reasons. The case is to be looked for in his having been previously too closely tied, and the cure, if it can be effected, is to be sought in the opposite direction. Tire him completely out for several nights in succession, and then, after a good grooming, show him a fresh, well-made bed in a loose box, or in his own stall, with a long, loose halter, or with none at all. It won't take him long to learn a lesson from nature and weariness.

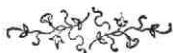
Pawing is another bad stable habit, and we have owned several horses that quite distinguished themselves at it. It is a vice of nervousness, and is sure to be increased by a noisy or unpleasant "horse neighborhood." It wears out shoes, hoofs, floors, and not unfrequently results in damage to heels and legs. Hardwork is a good remedy for most cases, but now and then an inveterate pawner must be absolutely shackled to keep him from hurting himself. It is a habit that comes and goes, and for which there is no remedy.

If you find that your horse after taking his hay into his mouth, chews it somewhat and then allows it to drop from his mouth, he is **quidding**, and the result will be poor work and emaciation. It may be caused by irregular teeth which will not let him grind with comfort, and this can only be cured by the rasp of the veterinary surgeon, but it is more apt to be the result of sore throat or sore mouth, and these must be looked

after. As soon as the cause is removed the "quidding" will cease.

"**Rolling**" when a horse is loose in his pasture or in the stable yard, is not only an agreeable amusement, but it has its uses. When, however, any misguided quadruped attempts it in the stable he is apt to hurt himself. As a general thing it cannot be called a confirmed "trick," and is only an indication that the poor fellow has been kept up too long without a chance to stretch himself. A few days in the field, or, if that cannot be, a vigorous rubbing of the shoulders, back, and loins, will take away the **stretchy feeling** which makes him want to roll. If the case is really a "trick," it can be absolutely prevented by shortening the halter so that the horse cannot get his head on the ground for a "purchase" to roll with. Some inveterate rollers can be restrained in no other way.

Horses which are naturally evil tempered and vicious when at home in their own stables are comparatively rare, and consequently, in nine cases out of ten a "**biter**" has been made so by defective education. He bites out of revenge or in imaginary self-defence. Kindness and firmness will generally cure the propensity to bite, but fear never will. If the habit has become confirmed, or the horse is of an ugly and treacherous disposition, the muzzle is the only safeguard to be worn whenever the animal is not feeding, and perhaps even then.



CHAPTER FOURTEENTH.

OUT OF DOOR TRICKS AND VICES.

SHYING IN HARNESS—REARING—KICKING IN HARNESS—
 RUNNING AWAY—LYING DOWN IN HARNESS—HARD
 PULLING—OVERREACH—CUTTING—STUMBLING—BALK-
 ING.

IN the previous chapter we have hinted at a few of the acquired tricks and bad habits of horses which manifest themselves in the stable. The list cannot, of course be exhausted in a treatise like this, because, except in a few general outlines, such peculiarities will vary with the breed, training, and special idiosyncrasies of the individual horse.

In dealing with them, as with those of which we are about to speak, it must be taken for granted that the *man* will not put himself on a level with his brute property, but will assert his superiority by superior patience, pluck, and good temper, trying in each case to merit that confidence and affection which is worth more than anything else in securing good behaviour from the horse.

The **out-door tricks** and vices of horses are sufficiently numerous, but common sense and average intelligence will have little difficulty in tracing them, as a general thing, to defects of natural disposition, of education, of physical structure, or to the consequences of accidents.

Of all equine tricks, in harness or under the saddle, that of **shying** is the most common, the most complicated, and the most difficult to deal with. Its best prevention is attended to in the early training of the colt himself, but its causes, then or in after life, are innumerable.

Defective sight, rendering the horse uncertain of his neighborhood, and distorting the objects presented to his vision, is very likely to produce this fault, especially in high-tempered horses. In such cases, if you can manage to cure the eye you stand a fair chance to cure the shying.

Oftener, shying results from nervousness and timidity, stimulated by bad management, and the sensitiveness frequently seems to concentrate itself upon one class of objects. We owned a horse once whom no punishment could force by or over a wisp of fluttering straw, or a bit of loose white paper, and another to whom a bridge was the embodiment of all terror. There is no end to these special peculiarities, and they can generally be traced, or could if the animal's private history were known, to some apparently unimportant episode in early life.

Besides these there is an immense amount of shying from mere cunning, "make-believe," or habit. Some horses have their little pet terror that will always give them an excuse to jump aside, or turn around unless they are too tired, or are going homeward, or are too positively sure of a keen lash or a sharp spur. We have had some curious experience with such horses that soon learned better than to try their cunning little tricks with

us, but would take to them again at once if ridden or driven by strangers.

The cure, in any case, can only be accomplished by a combination of firmness and good temper, which is only too rare. On no account should the horse be punished **after** he has passed the object at which he expressed alarm by his shying. When he shies, stop him at once, if possible; make him face the object of his terror, and encourage him, without any force or violence, to approach it and smell of it. Use all the art you are possessed of to persuade him that his fright is groundless. If you choose to so abuse him that he will always afterwards associate that object with additional pain and discomfort, it will be your fault if he shies more promptly the next time he meets it. If you flog or spur him the moment he is past the object of his fear, don't blame him if you have given him a perpetual hint to run under like circumstances. The voice is better than the whip, and the hand still better.

If an otherwise gentle and manageable horse exhibits a disposition to **rear**, whether in harness or under the saddle, attention should at once be given to **his mouth and bit**, as with a sore mouth and too sharp a curb, it is quite easy to teach that which becomes a very unpleasant and often dangerous vice. **Rearing**, especially in young horses, is frequently the effect of mere playfulness or inexperience, and if so it can be remedied by the ordinary martingale and a little hard work. Very severe measures are sometimes adopted with confirmed "rearers," such as knocking them down by a blow between the ears with a loaded whip, which may cure the

vice and may produce poll-evil; or pulling them gently over backwards, if under the saddle, to the imminent peril of spine, loins, and neck. If the horse's neck is broken he will not rear any more. There have been many mechanical appliances invented to prevent rearing, and in isolated cases no doubt some of them have met with success, but no general recommendation can be given. It does not constitute legal unsoundness, but it assuredly is a "vice" of the very first water.

Kicking in harness, or rather a tendency to kick out of it, is a very troublesome trick, generally the result of bad training. With some horses it is merely an expression of superabundant spirits, and a little extra work is all the remedy required. With others it is the outbreak of inherent vice and ugliness, and can only be dealt with by strong harness, kicking straps, and a liberal outlay of the lash. With mares the tendency to kick is often only periodical, and a merely sexual indication, and the animal should accordingly be dealt with mercifully. If the mare is in real trouble it would be better to take her out of harness than to ruin her temper by flogging her.

A prominent English writer on horses, sagely remarks, "**Running away** is too well known to need description."

We should think it was, but it is too dangerous a vice to be passed by. If a horse is known to be an inveterate runaway, he is legally vicious and unsound, but this is generally hard to prove. After even one runaway the animal must be watched, and each successive escapade makes him the more dangerous. Horses who only run

for the fun of the thing are apt to choose a light load, and a weak or timid driver; such runaways are more annoying than dangerous, unless they choose a crowded street to show off in. More frequently, however, a runaway is caused by sudden fright, which seems to generate a species of madness or hysteria, even in hitherto trustworthy horses, which only terminates with a grand smash-up or other exhaustion. Not a bad idea, if the place will admit of it, and there is room enough, is to give the too rapid traveller more running than he likes, and keep him going till he is altogether sick of it. This will often work a cure in horses who only run for the fun of it or from vice, but in those who are really seized with the running fright it will do little good. Such horses should never be used without paying special attention to the soundness and strength of the harness, and the driver should be on the lookout to check the very first symptoms of insubordination. Great care should be exercised in selecting bits for restive horses, in order to have them sufficiently powerful in case great checking power is called for, and yet so that it shall not excite the animal's temper by continually hurting him. The curb should only be used when it is absolutely necessary.

If a horse is inclined to **lie down in harness** or under the saddle, whether the trick is the result of laziness or ill-temper, it can best be met by sharp and sudden severity. Cut quick and hard with your whip every time the experiment is tried, and in most cases the horse will give up trying with *you*.

A very bad habit with some horses, particularly roadsters, is to **pull too severely on the bit**, as if they

meant to draw the whole load with their mouths. This is the result of bad training in too light a wagon. The animal was perhaps never fairly taught to pull from the shoulder, and it may be too late to teach him, though a season of hard pulling with a loose check rein, will sometimes work wonders. In many horses this is a symptom of a disposition to run away, or is a result of previous severe struggles with strong handed drivers. It should be looked out for in buying a road horse, as unless it can be cured it entails no end of unnecessary and disagreeable work on both him and his master.

Over-reach is caused by the toe of the hindfoot knocking against the shoe of the forefeet, and everyone is familiar with the disagreeable "**click**" so produced. In the trot, one foreleg and the opposite hindleg, are first lifted from the ground and moved forward, the other foreleg and the opposite hindleg remaining fixed; but, to keep the centre of gravity within the base, and as the stride, or space passed over by these legs, is often greater than the distance between the fore and hindfeet, it is necessary that the forefeet should be moved alternately out of the way for the hindfeet to descend. Then, as occasionally happens with horses not perfectly broken, and that have not been taught their paces, and especially if they have high hinder quarters and low fore ones, if the fore feet are not raised in time, the hindfeet will strike them. The forefoot will generally be caught when it has just begun to be raised, and the toe of the hindfoot will meet the middle of the bottom of the forefoot. Overreach sometimes may be simply the result of bad shoeing, and can be readily remedied.

Even when it is not it can be best provided for by skilful fitting, as it is very doubtful if any wild horse is ever so troubled. This is peculiarly a "farrier's vice," and it does not constitute "unsoundness."

Cutting depends either upon the legs being set on too near together, or on their joints not acting in a proper hinge-like manner. Many horses cut when in low condition, but are quite free from the defect when in flesh, and in such cases it is only necessary to let them wear a boot until they have had time enough to become fresh. Whenever horses "go close," care should be taken that the shoes do not project beyond the hoof, and the clenches of the nails should be carefully watched, the owner seeing that they are filed down by the smith if they stand up at all above the level of the horn. Cutting may take place either on the prominent part of the fetlock-joint, or midway between it and the knee, or just below the latter, which is called "**speedy cutting**," and is very apt to cause a fall. A boot should be fitted to the leg in either case, and worn till the part is thoroughly healed and all swelling has disappeared, when, if any likely method of treatment has been adopted, the horse may be tried without it, but no journey should be undertaken without one in the pocket in case it may be needed. A peculiar method of shoeing, called a feather-edged shoe, will often prevent this bad habit as long it is adopted.

Stumbling is vexatious enough, even in a plough horse, but in a roadster, and much more in a saddle horse, it becomes a very troublesome and dangerous vice. Its causes are very numerous, and these should be looked for carefully in each particular case, before

anything is attempted in the way of a cure, of which, indeed there is very little hope if the habit is at all confirmed. If in riding or driving a new horse you notice that he trips, ever so lightly, and then suddenly springs forward, you may be sure that the trick is an old one, and that he expects the righteous judgment of the whip or spur. If it arises from laziness or from a bad formation of the horse, has a too heavy forehead or the foreleg, being too much under the horse, there is very little hope for any improvement, though lazy horses will go safer at a fast rate than a slow one. Any stumbler is worse at some time than at others, and on rough ground than on smooth. The vice is apt to show itself in travelling slowly up a gentle but stony rise. Old age and defective sight will make stumblers out of anything, and for these there can be little done. Such horses should be ridden or driven with a tight rein and a hand always ready to recover and lift them up, but they are always unsafe. Bad feet, lameness, upright pasterns, overwork and leg weariness, are all causes of stumbling, and some of them can be provided for. Bad shoeing is a very prolific source of this vice and in some such cases the reverse will effect a cure. If, however, a horse has once begun to stumble, his best use thereafter will be in slow and heavy work or to loan as a saddle horse to men against whom you have a grudge. Consider your own neck too precious to ride such a horse if you can help it.

Balking, or an obstinate refusal to work, is almost invariably the result of bad training or bad management. It is a sulky vice, and his very hard to deal with. Cruelty will often overcome it temporarily, and there

are numberless methods of applying such a degree of torment that the poor brute will strain himself to almost any exertion rather than bear it, but the "sulks" are only overcome for the time being and will return at the first opportunity. It is true that many horses are so completely ruined in this respect that nothing but pain seems to do any good, but even with them it really only confirms the evil. At all events we have no suggestions to make in the art of inflicting punishment, for earbiting, whipping, tail twisting, and other gentle and merciful appliances are only too commonly well known. Gentleness, patience, and firmness, will do best where anything whatever can be done. Many willing workers will sometimes balk when overloaded or overtired, or when their shoulders are out of order. In such cases encouragement and help are the best medicines. A generous horse will learn to start again very willingly when he finds his master seeming to pull or push with him. If a horse whose body and limbs are in good condition is an habitual balker, there is nothing to be done with him, he is incurably vicious and unsound.

Backing in harness is very nearly allied to balking, and is caused partly in the same way, except that it is more temper and less sulkiness. Defective training, putting a colt to too hard a strain on the collar at first, or pushing him up hill before he has learned to pull: working a horse at any age with a sore or tender shoulder, or giving him a load beyond his power, will teach him to back rather than tug. The remark of Youatt on these two are so full of good sense that we borrow them:

“ One of the first species of restiffness, taking them in alphabetical order, is **Backing or Gibbing**. These are so closely allied, that we hardly know how to separate them. Some horses have the habit of backing at first starting, and that more from playfulness than desire of mischief. A moderate application of the whip will usually be effectual. Others, even at starting, exhibit considerable obstinacy and viciousness. This is frequently the effect of bad breaking. Either the shoulder of the horse had been wrung when he was first put to the collar, or he had been foolishly accustomed to start in the break *up-hill*, and, therefore, all his work coming upon him at once, when it being much more difficult to draw the break *up-hill*, than to back and to let it run *down-hill*, he has gradually acquired this dangerous habit.

“ A hasty and passionate breaker will often make a really good-tempered young horse an inveterate gibber. Every young horse is at first shy of the collar. If he be too quickly forced to it, he will probably take a dislike to it, that will occasionally show itself in the form of gibbing, as long as he lives. The judicious horse-breaker will resort to no severity, even if the colt should go out several times without touching collar. The example of his companion will ultimately induce him to take to it voluntary and effectually.

“ A large and heavy stone should be put behind the wheel before starting, when the horse, finding it more difficult to back than to go forward, will gradually forget this unpleasant trick. It will likewise be of advantage, as often as it can be managed, so to start that the horse shall have to back *up-hill*.

The difficulty of accomplishing this will soon make him readily go forward at once. A little coaxing, or leading or moderate flagellation, will assist in accomplishing the cure.

“When, however, a horse, thinking that he has had enough of work or has been improperly checked or corrected, or beginning to feel the painful pressure of the collar, swerves, and gibs, and backs, it is a more serious matter. Persuasion should here first be tried; and afterwards reasonable coercion, but no cruelty; for the brutality which is often exercised in attempting to compel a gibbing horse to throw himself habitually into the collar, never yet accomplished the purpose. The horse may, perhaps, be whipped into motion, but if it has once begun to gib, he will have recourse to it again whenever any circumstance displeases or annoys him; and the habit will be rapidly, and so completely formed, that he will be come insensible to all severity.

“It is useless and most dangerous to contend with a **horse determined to back**, unless there is plenty of room, and, by tight reining, the driver can make him back in the precise direction he wishes, and especially up-hill. Such a horse should be immediately sold, or turned over to some other work. In a stage coach as a wheeler, and particularly as the near wheeler, or, in the middle of a team at agricultural work, he may be serviceable. It will be useless for him to attempt to gib there, for he will be dragged along by his companions whether he will or no; and finding the inutility of resistance, he will soon be induced to work as well as any horse in the team. This reformation will last while he is thus employed, but, like restiffness gener-

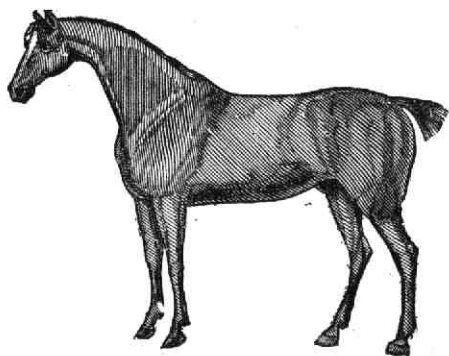
ally, it will be delusive when the horse returns to his former occupation. The disposition to annoy will very soon follow the power to do it. Some instances of complete reformation have occurred, but they have been rare.

When a horse, not often accustomed to gib, betrays a reluctance to work, or a determination not to work, common sense and humanity will demand that some consideration should be taken, before measures of severity be resorted to. The horse may be taxed beyond his power. He soon discovers whether this is the case, and by refusing to proceed, tells his driver that it is so; and the utmost cruelty will not induce many horses to make the slightest effort, when they are conscious that their strength is inadequate to the task. Sometimes the withers are wrung, and the shoulders sadly galled; and the pain, which is intense on level ground and with fair draught, becomes insupportable when he tugs up a steep acclivity. These things should be examined into, and, if possible, rectified; for, under such circumstances, cruelty might produce obstinacy and vice, but not willing obedience.

Those who are accustomed to horses know what seemingly trivial circumstances occasionally produce this vice. A horse whose shoulders are raw, or that 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 gibbers have been reformed by constantly wearing a false collar, or strip of cloth around the shoulders, so that the coldness of the usual collar should never be felt; and others have been cured

of gibbing by keeping the collar on night and day, although the animal is not able to lie down so completely at full length, which the tired horse is always glad to do. When a horse gibs, not at starting, but while doing his work, it has sometimes been useful to line the collars with cloth instead of leather; the perspiration is readily absorbed, the substance which presses on the shoulders is softer, and it may be far more accurately eased off at a tender place.

Shoulder straps and collars are frequently lined with sheep-skin, the woolly side outward, and much ease has been afforded the animal by this contrivance, especially where the harness has been indifferently fitted, or become hardened for want of greasing.



CHAPTER FIFTEENTH.

DISEASES OF HORSES.

BONE DISEASES—CLASSIFICATION—SPLINTS—RINGBONE—
 SPAVIN—FISTULA OF THE WITHERS—POLL-EVIL—ULCER
 OF THE JAW—BIGHEAD—FRACTURE.

AND now we come to the consideration of a most complicated subject, concerning which a vast amount of nonsense has accumulated. Nor can we attempt such a medical treatise as will dispense with the services of the veterinary surgeon. A man who is conscious of ignorance and inexperience had better do as little in the doctoring line as may be, for horses, like men, will do best, on an average, with very little medicine. An ounce of prevention, in the various ways which we have pointed out, is worth several hundred weight of attempted cure. As a rule, **nursing and rest** are of more value than anything else, and it may be set down quite positively that "if you are not sure what should be done you had better not do it." On an average, a man will stand a good deal more of random poisoning than a horse will, though it is astonishing how some will recover at the same time from the effects of disease and quackery.

In the **frontispiece** at the beginning of this book, we have given a somewhat exaggerated representation of the external signs of many of the ills that horseflesh is

heir to, and in our hints on buying we have tried to describe the more common of them, but all diseases are not to be looked for on the surface. Many of them are the temporary consequences of bad usage, bad feeding, bad stabling, or accidents, and in any case the *cause* must be sought for before any clear idea can be formed as to the most desirable treatment.

We shall be compelled to be more or less technical, but will try and make the matter as clear as possible, so that no one need be led astray by unaccustomed phraseology.

Diseases of the bone are rarely attended by any general symptoms, and in treating them it is only necessary to care for the general health of the animal, as they are purely local in their nature. Those of them which may be classed as "malignant" are incurable, and no space need be wasted upon them.

All bone diseases may be classed under the following heads: *First*, Exostosis, or superfluous growth of bone. *Second*, Caries, or ulceration. *Third*, Ankylosis, or the unnatural union of two bones, in consequence of either or both of the other diseases. *Fourth*, Fractures.

Exostosis is peculiarly a disease of young horses, and rarely occurs after six or seven years of age, except in cases where it has become chronic. It is caused by superabundant nutrition of the part: that is, nature is *too* active and supplies more bony matter than the wants of the structure call for. It is to be detected in recent cases by a slight swelling of the part, accompanied by soreness. Sometimes it will be so located that no swelling appears to the eye, or can be found by the

finger, and its presence is only indicated by lameness or tenderness. A severe blow on any bone that is only covered by skin may produce an inflammation followed by exostosis. This is a too active effort of nature to repair the injury. Overwork will stimulate a precisely similiar over supply.

The most common exhibitions of **Exostosis** are **Splints, Ringbone, Spavin**, and their kindred affections. In describing these and their treatment we must acknowledge our indebtedness to the English work of Mr. J. H. Walsch, F. R. C. S. ("Stonehenge"), a very good reprint of which has appeared in this country. Of course no "green hand" will have the presumption to attempt the more difficult experiments which he suggests, but, on the whole, his views and indications may be accepted as sound and sensible. He says of

SPLINTS.

"The strict definition of this disease is 'an exostosis from the lower part of the small metacarpal bone, connecting it by bony union with the large metacarpal bone,' but among horsemen, any bony growth from the cannon bone is considered a splint, and the latter is almost as common as the former. The regular splint rarely attacks the outer small metacarpal bone alone, but sometimes in very bad cases both are implicated in the disease. It is difficult to give a valid reason for this greater frequency of splint on the inside than on the out, but it is commonly said that the inner splint bone receives more of the weight of the body than the outer one, and that it is more under the centre of gravity, but

as it is merely suspended from the carpus, and is not supported from below (in any way, mediately or directly), this can produce no injurious effect upon it. The fact is so, however, whatever may be the cause.

“The **symptoms of splint** are generally a greater or less degree of lameness during its formation, but sometimes it may go on to attain a large size without any such result, especially if its growth is slow, and the horse is not severely worked. It is commonly remarked that a splint is of no consequence unless its situation is such as to interfere with the back sinews, or suspensory ligament, and although it is quite true, as has been asserted by learned veterinarians, that the splint is far removed from the former, and seldom interferes with the latter, yet it is almost always directly connected with the attachments of the sheath of the tendon, and this being stretched every time the leg is extended will occasion the pain which is expressed by the limp in the action. The size of the morbid growth has no relation with the amount, or even with the existence of lameness for a very small splint will often be far more productive of this symptom than a very large one. In examining a leg it is often only after careful manipulation in the flexed condition that a small bony tumor (of the size perhaps only of a garden pea) can be detected, but when once the finger presses upon it, the horse will almost invariably be found to flinch, and usually it will be thrown out just where the sheath of the tendon is attached. Here there is no union between the large and small metacarpal bones, and the injury is confined to the inflammation produced in the sheath, which will generally go off after proper treatment and rest. These

small bony growths are not very uncommonly met with in the hindlegs, but they are not recognized there as splints. No constitutional symptoms are met with in these cases, and they must be ascertained by the local symptoms alone. Unless the splint is in the way of the action of the other foot, and the skin on its surface is bruised by repeated blows, there is seldom any swelling of the soft parts, but when this occurs, the skin and cellular membrane become puffed and hot, and extreme lameness is the result, temporarily aggravated by every blow.

“**The treatment of a splint** will depend upon the state in which it exists, and upon the purpose to which the horse possessing it is destined. If no lameness exists, and the blemish is not objected to, it is far better not to meddle with it, for in the course of a few years it will disappear by absorption as a matter of course. Moreover, it often happens that in attempting to remove a splint by some irritating application, extensive inflammation is set up in the fibrous strictures attached to it, and lameness, which was not previously in existence, is thenceforth a most troublesome attendant. If, however, the horse is to be sold, in which case the existence of a splint would be regarded with suspicion, or if lameness has shown itself, it will be necessary to adopt measures likely to effect the absorption of the morbid growth, and these are chiefly two:—1st, Subcutaneous scarification, with or without a seton, or the seton alone; and 2nd, Counter-irritation by means of some form of blister. If the soft parts covering the splint are much inflamed, the horse should have his corn taken away, and a dose of physic given him, during

which a wet bandage should be kept constantly applied, and indeed, in any case of splint severe enough to require operation, the cooling remedies mentioned above should be adopted beforehand. The operation is performed with a probepointed narrow knife, shaped like a scimeter, with the cutting edge on the convex side. A small opening is made in the skin about an inch below the splint, and just large enough to admit the knife, which is then introduced and pushed upwards with its flat side towards the skin, till it reaches the tumor, when the convex edge is turned towards this, and several extensive scarifications are made in the periosteum covering it, after which the knife is withdrawn and a fine seton-needle is introduced in its place, and passed upwards until it reaches above the splint, when it is pushed through, and the tape drawn out, and properly secured with a bandage. Of course the horse must be cast and properly secured before resorting to the knife. In the course of ten days or a fortnight the tape may be withdrawn, and the splint will almost invariably disappear. Sometimes the seton is tried without the scarification, but it is not nearly so successful, and is nearly as troublesome an operation. In most cases both of these operations are unnecessary, and the application of the following blister (which has a tendency to produce absorption, independently of its counter irritative powers) will have the desired effect.

Take of Biniodide of Mercury	1 drachm
Lard 	1 ounce. Mix

And after cutting the hair short, rub a little into the skin, covering the splint, every night, until a free

watery discharge is produced from the surface. To facilitate this the leg should be fomented with **very hot water** every morning and afternoon, and this should be continued for several days after the ointment has been discontinued. The horse will not gnaw the skin after this application, and it is a very useful one for general purposes, when counter-irritation is required to produce absorption. If after a week's interval, the splint does not appear much reduced in size, the ointment should be re-applied, and repeated at similar intervals till the swelling is removed. When the bony growth is very extensive, neither scarification nor counter-irritation will be of much service, and the leg must be fired, and afterwards repeatedly blistered, but even with the best and most energetic treatment, the part will seldom become sufficiently sound to stand anything but slow work.

RINGBONE AND SIDEBONE.

“**Ringbone** and **sidebone** both consist in the throwing out of bony matter about the joints of the os coronæ; the former name being given to the disease when it attacks that between it and the os suffraginis, and the latter when the seat is the parts around its union with the os pedis or coffin-bone. Very often, and especially in heavy cart or dray horses, ringbone and sidebone co-exist in the same leg where the three bones are completely ankylosed, and in which, during life, the only action was in the fetlock joint. The disease attacks the hindleg as well as the fore; but it is more common in the latter than in the former.

“**The symptoms** are a greater or less enlargement of the leg, of a hard or unyielding nature, either immediately above the coronet, as in sidebone, or a little higher, as in ringbone. In the latter case, if thoroughly established, it surrounds the joint, whence the name of ringbone; but in the early stages it appears at certain points from which it spreads all around. Sidebone is seldom so extensive and usually attacks the posterolateral parts of the os coronæ, where the swelling is defined, and, except in very hairy-legged or gummy-heeled horses, can easily be felt. In the early stages the action is not impeded, but there is more or less soreness or lameness. After much bone is thrown out, the joints are either completely fixed or their movements are extremely limited.

“**The treatment** in the early stage is precisely similar to that for splint; but the operation of scarifying the periosteum requires great care and some knowledge of the anatomy of these joints, or the knife will pierce the capsular ligament, and increase the evil it was intended to relieve. A seton without the scarification will often be of service, and for sidebone, firing in the early stage will be serviceable, though it is objectionable on account of the blemish it leaves behind. The biniodide of mercury ointment already described is most useful in slight cases, but in severe ones it will rather tend to aggravate the growth, and when **anchylosis** has taken place, nothing but time and patience for the subsidence of the inflammation will avail. When this has taken place, and the joint is fixed, a high-heeled shoe will enable the horse to work, with some awkwardness, it is true, and the addition of a leather sole will to some

extent take off the jar, which occurs in a greatly increased ratio when the elastic action of the pastern-joints is destroyed.

OSSIFICATION OF THE LATERAL CARTILAGES.

"This is commonly known as ossification of the cartilages, or **false ringbone**, no other cartilages being subject to ossification, and these being therefore known *par excellence* as the cartilages. In heavy cart horses it often co-exists with ringbone and sidebone, especially the latter; but it also attacks well-bred carriage-horses, and high-actioned hacks, which are comparatively free from those diseases.

"**The symptoms** are more or less enlargement of the back of the coronet, and heel, the part feeling unnaturally hard and irregular or lumpy. If recent, there is generally increased heat on careful examination with the hand; but in old standing cases there is nothing of the kind to be detected. Lameness is not always present, but if the horse is rattled over hard ground, he will be more likely to show the effects on the next day, by going short and sore, than if he were free from this disease.

"**The treatment** should be confined to recent cases, for in old standing ones, unless lameness shows itself, it is better to avoid any interference. A seton, with rest, has sometimes proved very efficacious, even in confirmed ossification, and **repeated dressings with biniodide of mercury ointment**, will, in those cases where the inflammation does not run very high, afford the best chance of causing the absorption of some of

the bone, for a complete cure is never effected. When there is much heat in the part, bleeding from the foot may be adopted, and afterwards the application of cloths dipped in cold water, with the addition of a glass of tincture of arnica to a quart of water. In confirmed cases, where the parts have become callous, a leather sole to the shoe will take off the vibration, and should be used during the summer season. Scarification of the skin covering the enlargement with a lancet, encouraging the bleeding by warm water, and followed by the use of cold water as soon as the bleeding has ceased, will sometimes do wonders in recent cases. The scarification should be repeated at intervals of five or six days, taking care to avoid injury to the coronary substance near the hoofs, which is sometimes followed by troublesome sores.

BONE SPAVIN.

This disease, so frequently the cause of lameness in those horses which use their hocks severely (as for example, race-horses, hunters, carriage-horses, and more particularly cart-horses), consists in exostosis from the adjacent external surfaces of the tarsal bones, always showing itself at the inner side of the hock-joint, on the scaphoid and cuneiform bones, and extending to the head of the internal metatarsal bone. As in the case of splint, the occurrence of exostosis on the internal rather than on the external side of the hock has been accounted for by the supposition that increased weight is thrown upon the internal small metatarsal bone, from the turning up of the outer heel of the shoe, which is the common practice of smiths. It appears to me, however,

that the contrary is the case, and that though more stress is laid upon the foot on that side, there is less weight on the inner side of the hock, which has a tendency to spring open in that direction. This will cause a strain upon the ligaments connecting the tarsal bones, and nature coming to their aid throws out bone, which ultimately substitutes ankylosis for ligamentous union between these bones. In all the actions of the hindleg, from the natural shape of the hock, and more especially in those horses which are naturally "cow-hocked," there is a tendency to yield inwards rather than in the opposite direction. The consequence is that there is more strain upon the ligamentous fibres which connect the scaphoid with the two cuneiform and the internal metatarsal, than upon those uniting the cuboid with the os calcis and external metatarsal bone. Hence, although exostosis does sometimes show itself in other parts of the tarsal bones, it here as in the foreleg, is almost always confined to what is called the "spavin place," namely, the contiguous surfaces of the scaphoid, cuneiform, and internal metatarsal bones. In very bad cases the articular cartilage becomes involved, and there is not only an external casing of new bone, but the internal surfaces absolutely coalesce or ankylose.

"The symptoms of spavin are a *hard* substance showing itself beyond the proper level of the hock-joint. There may or may not be lameness, but if bone is thrown out the disease is established. In recent cases whenever the horse is worked he will, *after rest*, limp in his action, but the lameness soon goes off, and does not show itself again until the part has been suffered to become stiff by a rest of an hour or two. The lameness is very

remarkable, and differs greatly from that shown in any other disease. The leg is drawn up with a quick catch, and yet there is a dragging of the limb, indicating not only pain in the joint, but a want of action in it. In the early stages the latter is not clearly developed, but afterwards it is so well marked that a spavin may be pronounced to exist without an examination of the joint. Where lameness is not established, great care should be exercised in pronouncing on the existence of spavin, for some hocks are naturally formed with prominent heads of the internal metatarsal bones, and the inexperienced eye and hand are very apt to mistake these for exostosis. In such cases, by comparing the two hocks it will generally be seen that they are both exactly alike, while in spavin, although both joints may be the seat of mischief, yet they will seldom manifest the disease to the same extent.

“**The treatment** should be directed to the **abatement of the inflammation** which gives rise to the pain, and also to promote absorption of the new growth. Veterinary surgeons are very apt to assert that the disease cannot be cured, and that a spavined horse will always remain the subject of it, and therefore unsound. But practically it is known that many a hock which has been the seat of undoubted spavin loses all external enlargement, and no lameness is shown in it, although tried most severely through a series of years. Still on dissection after death, the ligaments will not show their natural white and glistening structure, and the tarsal bones will be to a certain extent united by ankylosis. In very bad cases there will be also caries of the articular surfaces, and with it inflammation of the synovial

membranes, which may and often does exist without the caries. Now as these are much more formidable diseases than exostosis, and far more difficult either to cure or palliate, it follows that although certain remedies will be generally successful with genuine bone spavin (exostosis), yet they will fail when the above complication exists. The treatment must therefore be adapted to the exact nature and extent of the disease. Prior to the adoption of any plan the joint should be rested, the outer heel of the shoe should be lowered, the corn should be taken away, and the system cooled by appropriate treatment. After these precautions are taken, the next thing is to decide upon the remedies which will be suited to the case. They consist in—1, Blisters, which have a tendency to cause absorption; 2, Firing; 3, Setons, with or without subcutaneous scarification; 4, Division of the nerve. If there is simply a slight exostosis, with little lameness, and no evidence of the joint being implicated, the BINOUIDE OF MERCURY may be applied as described at page 108. Repeated dressings will be necessary, and the joint must have at least two months' absolute rest, the horses being placed in a loose box. This remedy is often successful, but it will fail utterly where the exostosis is extensive, or there is caries, or even severe inflammation of the **synovial membrane**. Arsenic, sulphuric acid, and other caustic applications, have been counted as infallible cures; but while they are just as certain to produce a blemish as firing, the extent to which the inflammation and sloughing, caused by them, go, is far more completely beyond our control. Arsenic has been known to destroy the joint, by producing a slough of

the synovial membrane, and it is said that the sulphuric acid, which, however, is often very successful, has had a similar unfortunate result; but of its being followed by serious blemishes there is abundant proof. **Firing** is the safest and, therefore, the usual plan adopted for spavin, and on the first intimation of the disease it is often adopted without any necessity for having recourse to so disfiguring a process. Its chief advantage is, that while it is a certain means of establishing a strong counter-irritation, it has no tendency to cause any increase of inflammation in the structures beneath the skin, and therefore the good it does is unalloyed by any counterbalancing evil. It is now the fashion to deny its use, and horsemasters are often tempted to try some substitute for it, in the hope of escaping a blemish; but too often they are compelled to submit to it at last, and probably after the disease has been aggravated by some "unfailing" remedy. If there is a strong desire expressed to avoid a blemish, the veterinary surgeon is perfectly warranted in doing all in his power to effect a cure without the use of the irons; but the mere fashion of the day should not induce him to decry a plan which has for so many years been proved to be successful. In human surgery the same course has been adopted, and for the last thirty or forty years the actual cautery has been voted "barbarous" in this country. Now, however, a counter current is setting in, and it is the general opinion of the first hospital surgeons of the day that, in certain diseases of the joints, no remedy is nearly so efficacious. All sorts of attempts are made to render the use of the hot iron less repugnant to the senses; but in the case of the horse it is only necessary

to measure its comparative utility and the amount of pain which it gives. The former has been already considered, and as to the latter, if the irons are properly heated I much doubt whether their action is not less painful than that of any other counter-irritant. **Setons**, perhaps, give less pain if skillfully inserted, and they are admirable remedies, having nearly the same beneficial effects as firing, and leaving a far slighter blemish. They should be passed beneath a considerable track of the skin, covering the "**spavin place**," and the **tape** requires to be smeared **with blistering cerate** to produce sufficient irritation. Their use by themselves is often sufficient, but when preceded by subcutaneous scarification they seem to act even more certainly than firing.

"The method of operation is similar to that described for splints, but it requires more knowledge of the anatomy of the parts to avoid doing mischief by cutting into one of the joints. There is always afterwards considerable effusion into the subcutaneous cellular membrane, demanding two or three months for its removal; but as the spavined horse requires that interval of rest, this is of little or no consequence. When the disease has gone so far that no method of treatment will remove it, the nerve above the hock may be divided, which will enable the horse to work without pain for a time, but the disease goes on the faster, and the benefit derived is only temporary.



EXOSTOSIS OF THE HUMERUS AND SCAPULA.

"The heads of the bones adjacent to most of the joints of the body are more or less subject to **exostosis**, though not so frequently as those of the pastern bones and tarsus. Next to these probably comes the **shoulder joint**, the neighbourhood of which is often the seat of this disease. The left scapular and humerus of a horse are often completely ankylosed, and of course there co-exists a proportionate amount of lameness during the progress of disease, while after the ankylosis takes place the want of action is complete. An examination by the hand of the point of the shoulder would readily detect so large a growth of bone as this: but smaller ones are often thrown out beneath the mass of muscles surrounding the shoulder joint, and consequently beyond the reach of the most accomplished finger. The *treatment* should be on the same principle as for spavin, omitting the subcutaneous scarification, which is not here practicable on account of the nature of the joint. **Blisters**, and especially with the **Biniodide of Mercury**, will be the most likely to succeed, but in most cases the cure will be only partial."

A disease much less common in the United States than in England, for the reason that horses are employed to a less extent under the saddle, is that which is known as "**thiselo**," which is a vulgar corruption of "**Fistula of the withers**." It is caused by blows, pressure, or other mechanical sources of inflammation.

The first symptoms are heat and tenderness, accompanied by a slight swelling, and at this point perfect rest with warm fomentations will frequently check the difficulty. This, however, does not often happen, as the symptoms are likely to be unnoticed or disregarded **until an abscess has begun to form**, and this may be detected by the fluctuating feeling when lightly pressed by the finger. No time should be lost, and an opening should be made low down on the right side, so low that there is no part of the **sack of the abscess below it** to retain any of the poisonous matter, and large enough to let the matter all run out as fast as it forms, for "**fistula**" is in a measure self propagating, and the secretion is not only an effect, but a cause of the inflammation. Entire relief from it, with rest, will sometimes be sufficient to work a cure without special applications. In cases of long standing, however, the "sack" itself and the passage leading to it become lined with a tough membrane, and nature is prevented from doing her work. In such cases a **seton tape**, passed through from end to end and left there, or **an injection**, will be of service. The latter may be one of several very good prescriptions. As good as any is **one drachm of chloride of zinc dissolved in a pint of water**, and carefully injected into every part of the "thiselo" two or three times a week.

A disease very similar to fistula, in cause, effect, and treatment, is **Poll Evil**. It may be brought on by a blow on the top of the head, or the animal "bumping" against his manger or his stable door, or by a too great strain caused by tight reining, or otherwise. The

ligament of the neck passes over the "atlas" or first bone of the neck, without being attached to it, and the seat of the inflammation is between this ligament and the bone beneath. It will readily be seen what intense pain would be caused by the formation of matter at such a point if no way for its escape should be provided.

The **treatment is simple**, almost identical with that for fistula, only great care must be taken **to avoid the spinal cord**, the knife should not be run in deeply, but slantingly, and on the right side, making a passage that will surely permit all the pus to run out. A seton should generally be employed. If the opening is made with the needle, put it in on the top of the swelling, make sure that it reaches the bottom, and bring it out a little below the abscess on the right side. The reason for this latter is that most horses lie down on the right side, and thus, both in **fistula and poll-evil** the matter can continue running when he is lying down. If he happens to have formed the habit of laying on his left side, act accordingly.

Very bad cases of either of the two last mentioned diseases require severer treatment, and such manipulation and surgery as can hardly be successfully attempted by inexperienced hands.

Ulcers on the jaw (*caries*) may be caused in various ways, perhaps more frequently by cruel and barbarous bits than in any other. Hard pullers and vicious horses are likely in this way to suffer the reward of their ill doings and bad temper.

The symptoms are a tendency to bleed at the mouth from a slight pressure of the bit, and an appearance of

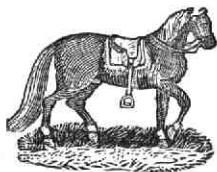
pink froth. In such a case a further examination may discover a peculiar sore; it may be on either the upper or lower jaw, or on the roof of the mouth. There will be a depression, indicating loss of substance, and containing more or less of **proud flesh**, clearly an unnatural growth, and but slightly attached to the sides of the cavity. There is a continual discharge, offensive and watery, but this is generally lost in the horse's saliva.

The treatment is simple but effective. Take away the bit that caused the difficulty, and, if the horse must be used, employ a bit that will press elsewhere and be milder in its operation. Keep the wound open by the use of **lunar caustic**. Press the caustic in hard and quick, **not letting it burn over two seconds**, and not any more than is necessary to keep down the proud flesh. By keeping up this treatment patiently the disease can in time be pretty effectually cured.

In the northern and eastern parts of the United States we have very little of what is known as the **Big Head** among horses, though as much can hardly be said for their owners. In the South, West, and South-west, this disease (**osteosarcoma**) is more common. It is a malignant growth from the cellular structure of the jaws, and partakes both of the nature of bone and cartilage. The symptoms are altogether local, and cannot well be mistaken. Any large, irregularly hard, unwieldy swelling on either of the jaws may be set down to this disease. It is a terrible thing, not unfrequently growing in such an eccentric way that the poor animal cannot shut his mouth, and dies of starvation. Its advance is slow but sure, and there is nothing to be done for it. It

has, in some cases, been removed by amputation, but the swelling and the horse were generally destroyed at about the same time. If your horse has the "big head," work him as long as you can with humanity, and then humanely shoot him.

It is a generally received notion that when a horse has fractured a bone it is all up with him, and he must be destroyed. This is practically true, in most cases, and yet many are on record in which such injuries were treated with a very fair degree of success. The difficulty lies not so much in the refusal of broken bones to unite, as in the skill and appliances required to keep the parts which are to be rejoined "in position," the animal himself being apt to add his own obstinate struggles to the other bad features of his misfortune. At all events, a higher degree of surgical skill must be called into play than is apt to fall to the lot of those for whom we are writing, and we can only advise them to take the best local advice they can get, promising that it will be almost invariably, "Kill him."



CHAPTER SIXTEENTH

DISEASES OF HORSES.

THE JOINTS, MUSCLES, AND TENDONS—RHEUMATIC INFLAMMATION—BOG-SPAVIN—THOROUGHPIN—WINDGALL—CAPPED HOCK—STRAIN OF BACK SINEWS—STRAIN OF SHOULDER, KNEE, FETLOCK AND COFFIN-BONE—BREAKING DOWN—STRAINS OF HIP-JOINT, STIFLE AND HOCK—CURB—DISLOCATION—WOUNDS OF JOINTS.

IN attempting to deal with this class of horse-evils, and it is a very important one, we are confronted by a good deal of apparent difficulty in being clear and concise without being technical. The meaning of some terms will be best acquired by a study of the cuts, while for others the entirely inexperienced must be referred to the dictionary.

Muscle is subject to simple atrophy, with or without fatty degeneration. The disease shows itself by a wasting away of the part, accompanied by a flabby feel to the touch. It should be *treated* by friction, gentle but regular work, and steel given internally, one drachm of the sulphate of iron, powdered, being mixed with the corn twice a day.

Rheumatic Inflammation of a muscle or muscles is one of the most common of all diseases to which the horse is subject. Most frequently it attacks the muscles of the shoulder, or of the loins, sometimes both those parts being involved at the same time. When *acute* it

receives the name of a *chill*, and is generally brought on by exposing the horse to a draught of air after work, or by immersing him in cold water up to his belly, with a view either to refresh him, or when the groom is lazy, to save him the trouble of cleaning. *The symptoms* are lameness or inability to use the part, the horse, when forced to do so, giving expression of severe pain. If the shoulder is affected, the foot is not put to the ground, and when the leg is moved backwards and forwards by the hand, great pain is evidently experienced. In severe cases there is fever with accelerated pulse (70 to 80), accompanied oftener by profuse sweating, and heaving at the flanks, the legs remaining warm. After a short time the part swells and is excessively tender. *The treatment* should be by a copious bleeding, if the horse is of a moderately strong constitution, indeed, in severe cases, it should be carried on till the pulse is greatly reduced, and repeated the next day, if it returns to its original hardness and fulness. The bowels should be acted on as soon as it is safe to do so, and if the dung is very hard, backraking and clysters should be used, to accelerate the action of the medicine. The best aperient is castor oil, of which a pint may be given with an ounce of sweet spirits of nitre. When this has acted, if the kidneys are not doing their duty, a quarter of an ounce of nitre and a drachm of camphor may be made into a ball and given twice a day.

Chronic Rheumatism of the muscles is similar in its nature to the acute form, but, as its name implies, it is more lasting, and of less severity. It often flies from one part to another, attacking the ligaments and tendons, as well as the muscular fibres. It is seldom

much under control, and attention should be paid rather to improve the general health than to subdue the local affection.

Small Tumors, of about the size of a pea, often form upon the tendons, especially the "back sinews" of the forelegs. They may or may not occasion lameness, but they are always to be regarded with suspicion. As long as they remain indolent they are better left alone; but when they produce inflammation and pain, the best remedy is the biniodide of mercury ointment.

Ulceration of the cartilage is by no means common in the horse, and when it occurs it is generally complicated with other difficulties. No general rules can, therefore, be given for its treatment.

Acute Inflammation of the Synovial Membrane is seldom met with; but a chronic state, inducing an excessive secretion of synovia, is extremely common. The most usual situation is at the hock, where the swelling has received the name of bog-spavin and thoroughpin; but they also occur at the fetlock and knee joints; in the former case being sometimes confounded with windgalls, which are inflamed bursæ mucosæ (*mucous sacks*.)

Bog-spavin is very apt to attack young horses, when they are over-worked, before being fully seasoned; but it may occur at all ages. It shows itself at the inner side of the joint, because here the ligaments are wider apart, and there is more room for distension. Its seat is the capsule between the tibia and astragalus which is here unprotected by any strong fibrous covering, and

readily yields to the gradual pressure of the secretion from its internal surface.

Thoroughpin may be either an increased secretion of the synovial capsule, between the astragalus and os calcis, or between the scaphoid and cuneiform bones, or of the bursa mucosa lying between the tendo Achilles and the tendo perforatus. In the first of these cases, it often co-exists with bog-spavin, and the synovia may be made to fluctuate from one bag to the other, the only line of demarcation being the astragalo-calcanean ligament.

Both **bog-spavin** and **thoroughpin** may exist, or either separately, without occasioning lameness; but where they are just established there is generally some small degree of active inflammation, which causes a slight lameness on first going out of the stable, but soon disappearing.

The **treatment** should be by pressure, kept up for a long time, by means of a carefully-adjusted truss, alternated with cold bathing, and the use afterwards of tincture of arnica, diluted with water, as a wash. Subcutaneous scarification has succeeded in some few cases in causing the secretion to cease; but it has so often produced extensive inflammation of the joint that the operation is by no means to be recommended. Blistering with biniodide of mercury has also occasionally answered; but no plan is so successful, on the whole, as pressure, alternating with cold bathing.

Delicate **young foals** are subject to a rheumatic inflammation of their synovial membranes, specially displayed in the knees and hocks, and apparently caused by exposure to cold. It seldom goes on to produce

disorganization of the cartilages, but the capsular ligaments are distended with thin yellow synovia, causing considerable stiffness. The cellular tissue around the joints also becomes œdematous, and the legs fill all the way down to the feet. It is commonly known among breeders as the "**Joint evil**," and though in itself it is not dangerous, yet it marks the existence of constitutional weakness which is likely to occasion some more fatal malady. The **treatment** should consist in attending to the general health by strengthening the mare, which is best done by giving her a drachm of the sulphate of iron in her corn twice a day. The joints of the foal should be rubbed with equal parts of soap liniment and spirit of turpentine, and it should be assisted to stand for the purpose of sucking at regular short intervals if unable to help itself. In aggravated cases, however, the foal is not likely to recover its general strength, and it may be better to destroy it, but so long as it can stand and feeds well, hopes may be entertained of the joints recovering.

Every practical horseman is aware that the **sheaths** in which the back sinews and other tendons are lodged are **liable to inflammation** and thickening, without the tendon itself being involved. By passing the hand down the leg, an irregular network may be felt surrounding the tendons, which move up and down without disturbing it; and the surrounding cellular membrane is also thickened, and becomes hard and unyielding. There may be considerable heat about the part, but often it is quite cool; and the disease may continue for months without any great lameness, and with nothing to draw attention to it (excepting a slight stiffness on

leaving the stable) but the sensation communicated to the hand. At length, an unusually hard day's work sets up active inflammation, the leg rapidly fills, and there is so much lameness as to cause the horse to be thrown by. The **treatment**, in the early stage, should be the use of bandages, constantly kept wet with arnica and water, and nothing but walking exercise. After the thickening is fully established, no remedy short of blistering, or a charge, will be of the slightest avail, with a rest of two or three months.

The **synovial bags** are liable to inflammation, either from hard work, as in windgalls and thoroughpin or from blows, as in capped hock and elbow. The latter are said by some veterinarians to be serous abscesses; but there is no doubt that in all horses a mucous sack exists under the skin on the cap of the elbow and hock; and these become inflamed and filled with a very thin synovia, when they are bruised. They never extend beyond a certain size, and have no tendency to burst; nor are they inclined to a healthy termination of their own accord, but go on in the same condition from year to year.

Windgalls or puffs, are the most usual forms of these enlargements, and may be observed in the legs (hind as well as fore) of nearly every hard worked horse, after a time. Great care in the management of the legs by bandaging will sometimes keep them off, and some horses have naturally no tendency to form them, but in most cases, on examining the legs, just above the fetlock joints, of horses at work, a little oval bag may be felt on each side, between the back sinew and the bone. If recent, it is soft and puffy; but if the work is hard,

and the windgall is of long standing, it will be as tense as a drum. The synovial bag has no communication with the fetlock-joint; but there is another sack in front of the joint, and beneath the tendons of the extensors, which is often enlarged, though not so much so as the seat of the true windgall, and which is generally, though not always, continuous with the synovial capsule of the joint. The **treatment** consists in pressure by means of bandages, and the application of cold lotions, if the legs are hot and inflamed. Blistering and rest will remove them entirely; but no sooner is the horse put to work again, than they return as badly as ever. There is no radical cure but subcutaneous puncture and scarification, and this will produce too much adhesion to be advantageously applied.

Capped hock is often the result of a bruise of the superficial bursa or sack, which is situated on the point of the hock, immediately beneath the skin. It indicates either that the possessor has kicked in the stable or in harness; but it is more frequently caused in the former way than in the latter. The swelling is sometimes slight, being then just sufficient to show the joint slightly enlarged, and to give a soft, puffy sensation to the fingers, where there ought to be nothing but bone felt beneath the skin. The bursa always rolls freely on the bone, and when large, it can be laid hold of and shaken like a bladder of water. The **treatment** should be directed to abate any slight inflammation that may exist, if the case is established: but in recent ones, it is doubly necessary to apply cold lotions, which, however, there is some difficulty in doing, owing to the prominent nature of the part. A piece of stout calico

or fine canvas may, however, be shaped into a cap, carefully fitting the point of the hock; and this being tied by several pieces of tape in front of the leg, will allow not only of the application of cold lotions, but of pressure also. By this plan, continued for some weeks, considerable enlargements have been removed, but they are very apt to return on the slightest bruise. Setons through the bursa, and injections into its cavity of stimulating applications have often been tried; but they generally do more harm than good, and nothing can be relied on but the conjoint use of pressure and cold applications. The best lotion is the following:—

Take of Tincture of Arnica ...	3 oz.
Muriate of Ammonia	2 "
Methylated Spirit of Wine ...	4 "
Water	3 pints. Mix.

Capped elbow is precisely similar in its nature to capped hock, and must be treated in the same way. It is also known by the name of capulet.

The fibres of muscles, ligaments, and tendons, and the fascia covering them, are all liable to be over-stretched, and more or less, mechanically injured. This is called a strain, the *symptoms* of which are similar to the inflammation of the part occurring idiopathically. They are heat, swelling, and pain on pressure, or movement, shown by flinching in the one case and lameness in the other. In some cases there is considerable effusion of blood or serum, the former occurring chiefly in the muscles, and the latter among the torn fibres of the tendons or ligaments. The **symptoms** and treat-

ment will depend upon the part injured, which will be found described under the following heads; but in most cases an embrocation composed of equal parts of laudanum, olive oil, spirit of turpentine, and hartshorn will be beneficial if applied after the first active inflammation has subsided.

When a **young horse** is urged to excessive exertion he is very apt to over-exert himself in his awkward attempts to clear the obstacle, and next day he will often show a stiffness of the loins and back, which is seated in the large muscles connecting the pelvis with the thorax. He is said to have "**ricked his back**," in the language of the stable, and if the mischief is confined to the muscles alone, he may generally be permanently cured, though he will be more liable to a return than an animal which has never suffered from any accident of the kind. If, however, the spinal cord is injured, either from fracture of the vertebræ, or from effusion of blood, or serum pressing upon it, the case is different, and a perfect cure is seldom obtained. It is, however, very difficult to distinguish between the one case and the other, and the treatment may generally be conducted with the hope that the more important organ is uninjured. When there is complete palsy of the hind extremities, so that the horse can neither feel nor use them in the slightest degree, the case is hopeless. For the management of the strain of the loins, a full bleeding should be adopted, as it generally happens that the horse is plethoric and full of corn. Then apply a double fold of thick flannel or serge, dipped in warm water, to the whole surface of the loins, cover this over with a layer of india-rubber sheeting, and let

it remain on, taking care to renew the water if it has become dry. It generally produces a copious sweating from the part, followed by a slight irritation of the skin, both of which afford relief. In three or four days the flannel may be removed, and the embrocation alluded to above rubbed in two or three times a day, which will generally relieve the muscles so much that at the end of a week or ten days the horse is able to move quietly about in a loose box, and the cure may be left to time, aided by a charge on the back.

Shoulder strain was formerly very often chosen as the seat of lameness in the fore extremity, solely because the case is so obscure that it is beyond the knowledge of the unskillful examiner. Nevertheless, it is by no means so uncommon, as is supposed by some writers, and perhaps it may be asserted that it is now more frequently passed over when it really exists, than the reverse. It may be seated in any of the muscles round the shoulder-joint. The *symptoms* are very peculiar, and cannot well be mistaken by a careful observer who has once seen a case of shoulder lameness. In all other kinds (except the knee), the limb is freely moved while in the air, and no pain is expressed until the foot is about to touch the ground; but here the lameness is greatest while the knee is being protruded, and the limb is slung forward sideways, in a circular manner, which gives an expression of great imbecility. It also occasions great pain when the foot is lifted and drawn forward by the hand, just as in rheumatism of the part. When the strain is caused by a jump or a slip, causing the legs to be widely separated, there is often great obscurity in the case; but the history of the accident will

generally assist in forming a correct diagnosis. The *treatment* in the early stage will consist in bleeding from the plate vein, to the extent of five or six quarts of blood, followed by fomentations with hot water, if there is much heat and swelling, and giving a dose of physic as soon as the bowels will bear it. When the heat has disappeared, or at once, if there is none, apply the embrocation described at page 124; and if this does not produce relief, add to it one quarter of its bulk of tincture of cantharides.

The **knee**, unlike its analogue in the human subject (the wrist), is seldom strained in the horse, in consequence of the strong ligaments which bind the bones of the carpus together. Still it sometimes happens that the internal lateral ligaments are overstretched, or, in calf-kneed horses, the posterior common ligaments, or that connecting the scaphoid with the pisiform bone, or probably all these will suffer from over-extension. The accident may be recognized by the heat and swelling of the part affected, as well as by the pain given on using the joint. The anterior ligaments are seldom strained, but they are liable to injury from blows received in various ways. The **treatment** should be conducted on the same principles as those of strains in the shoulder. Cold applications will seldom do anything but harm in the early stage; but after hot fomentations have relieved the active mischief, by encouraging the effusion of serum into the surrounding cellular membrane, the former may be used with advantage. When the heat and other signs of active inflammation have disappeared, the biniodide of mercury ointment may be rubbed in, avoiding the back of the joint.

Strain on the fetlock shows itself at once, in consequence of the superficial nature of the joint, by swelling, heat, soreness to the touch, and lameness. It may be very slight or very severe but in the latter case it is generally complicated by strain of the back sinews, or suspensory ligament. The **treatment** will be precisely on the same plan as for strain of the knee. When the anterior ligaments of the fetlock joint are strained and inflamed, as so often happens with race-horses, the condition is known as "shin sore."

Dissection proves that the **coffin-joint** is sometimes the seat of strains; but it is almost impossible to ascertain its existence with certainty during life. The diagnosis is, however, not of much consequence, as the **treatment** will be the same, whether the coffin-joint, or the navicular-joint is the seat of the mischief. In any case, if severe, bleeding from the toe should be had recourse to, followed by cold applications around the coronet, by means of a strip of flannel or felt, tied loosely around the pastern, and kept constantly wet. When the heat has subsided the coronet should be blistered.

The **suspensory ligament** not being elastic, like the back sinews (which, though not in themselves extensible, are the prolongations of muscles which have that property), is very liable to strains, especially in the hunter, and to a less degree in the race-horse. The accident is readily made out, for there is local swelling and tenderness, and in the well-bred horse, which is alone likely to meet with a strain of this kind, the leg is rarely sufficiently gummy to prevent the finger from making out the conditions of the ligament and tendons.

There is no giving away of the joints as in "break down," but on the contrary the leg is flexed, and if the case is a bad one, the toe only is allowed to touch the ground. In ordinary cases, however, there is merely slight swelling of the suspensory ligament in a limited spot usually near its bifurcation, or sometimes in one division only close above the sesamoid bone to which it is attached. The horse can stand readily on that leg, but on being trotted he limps a good deal. Sometimes, however, there is a swelling of the feet without lameness, but in this case the enlargement is generally due to an effusion of serum into the cellular covering of the ligament, and not to an actual strain of its fibres. The *treatment* will depend greatly upon the extent of the mischief; if there is no great injury done, and the enlargement is chiefly from effusion of serum, rest and cold applications by means of bandages or otherwise will in the course of two or three months effect a cure. Generally, however, the case will last six or eight months before the ligament recovers its tone; and in a valuable horse no attempt should be made to work him before that time. Where the swelling is small, as it generally is, bandages have no power over it, as the projection of the flexor tendons keeps the pressure off the injured part. Here, dipping the leg in a bucket of water, every hour, will be of far more service than a bandage, and the sudden shock of the cold water will be doubly efficacious. After all heat has disappeared the biniodide of mercury may be used as a blister two or three times, and then the horse may either be turned out, or put into a loose box for three or four months, after which walking exercise will complete the cure.

In strain of the back sinews the position of the leg is the same as in strain of the suspensory ligament, and there is no giving way of the joints. The flexor tendons are enlarged, hot and tender, and there is great lameness, the horse having the power to flex the joints below the knee, but resolutely objecting to extend them, by bearing what little weight is unavoidable upon his toe. The case is often confounded with a "break down," but it may readily be distinguished by the fact that in the latter the joints give way on putting the weight upon them, whilst in mere strains they do not, and the tendency is to the opposite extreme. Frequently after a bad strain of the flexor tendons, the fetlock is "over-shot," or beyond the upright, in consequence of the continued flexion of the joints, to prevent pressure upon the injured fibres, and in the management this result should be carefully guarded against. The injury is generally confined to the sheath of the tendons, which, in most cases, gradually puts on inflammatory condition for some time before actual lameness is observed. In bad cases, however, the ligamentous fibres which are given off by the posterior carpal ligament to the flexor tendons are ruptured, greatly increasing the amount of inflammation, and subsequent loss of strength. In any case the tendon feels spongy, and slightly enlarged, and there is more or less soreness on pressure, and on being trotted, but in the latter case exercise removes tenderness, and very often temporarily causes an absorption of the effused fluid, which is again deposited during rest. This state of things goes on for a time, the keeper doing all in his power to alleviate it by wet bandages, etc., but at last severe work brings on

an amount of inflammation, with or without actual strain of the fibres of the tendon, and there can be no doubt about the propriety of rest and severe treatment. It often happens that both legs are slightly affected, but one being more tender than the other, the horse attempts to save it by changing legs, the consequence of which is that the comparatively sound tendons are strained, and he returns to his stable with both legs in a bad state, but with one of them requiring immediate attention. The **treatment** should be by local bleeding (from the arm, thigh, or toe), followed at first by warm fomentations, and in a few days by cold lotions. A high-heeled shoe (called a patten) should be put on the foot, so as to allow the horse to rest part of the weight upon the heel without distressing the tendon, and this will have a tendency to prevent him from overshooting at the fetlock-joint, which he will otherwise be very apt to do from constantly balancing his leg on the toe. After three or four days the hot fomentations will have done what is wanted, and a cold lotion may be applied by means of a loose linen bandage. The best is composed as follows :

Take of Muriate of Ammonia	2oz.
Vinegar	$\frac{1}{4}$ pint
Methylated Spirit of Wine ...	$\frac{1}{4}$ pint.
Water	2 quarts.
	Mix.

With this the bandage should be kept constantly wet, the application being continued for a fortnight at least, during which time the patient must be kept cool, by lowering his food, and giving him a dose of physic. At

the end of three weeks or a month from the accident, the leg must be either blistered or fired, the choice depending upon the extent of injury, and the desire to avoid a blemish if such a feeling exists. The latter is the more efficacious plan, no doubt, but blistering will frequently suffice in mild cases. If, however, the tendons at the end of a month continue greatly enlarged, a cure can hardly be expected without the use of the "irons."

BREAKING DOWN.

"Stonehenge" says:

"Great confusion exists among trainers as to the exact nature of this accident, which is considered by the veterinary surgeon to consist in an actual rupture of the suspensory ligament, either above or below the sesamoid bones, which, in fact, merely separate this apparatus of suspension into two portions, just as the patella intervenes between the rectus femoris and the tibia. Whichever part of the suspensory apparatus is gone (whether the superior or inferior sesamoidal ligament is immaterial), the fetlock and pastern joints lose their whole inelastic support; and the flexor tendons, together with their ligamentous fibres, which they receive from the carpus, giving way, as they must do, to allow of the accident taking place, the toe is turned up, and the fetlock-joint bears upon the ground. This is a complete 'break down;' but there are many cases in which the destruction of the ligamentous fibres is not complete, and the joint, though much lowered, does not actually touch the ground. These are still called breaks down, and must be regarded as such, and as quite dis-

inct from strains of the flexor tendons. The accident generally occurs in a tired horse, when the flexor muscles do not continue to support the ligaments, from which circumstance it so often happens in the last few strides of a race. The **symptoms** are a partial or entire giving way of the fetlock-joint downwards, so that the back of it either touches the ground, or nearly so, when the weight is thrown upon it. Usually, however, after the horse is pulled up, he hops on three legs, and refuses altogether to put that which is broken down to the ground. In a very few minutes the leg 'fills' at the seat of the accident, and becomes hot and very tender to the touch. There can, therefore, be no doubt as to the nature of the mischief, and the confusion to which allusion has been made is one of names rather than facts. **Treatment** can only be directed to a partial recovery from this accident, for a horse broken down in the sense in which the term is here used can only be used for stud purposes or at slow farm work. A patten shoe should at once be put on after bleeding at the toe to a copious extent, and then fomentations followed by cold lotions should be applied, as directed in the last section. As there must necessarily be a deformity of the leg, there can be no objection on that score to firing, and when the severe inflammation following the accident has subsided, this operation should be thoroughly performed, so as to afford relief not only by the counter-irritation which is set up, and which lasts only for a time, but by the rigid and unyielding case which it leaves behind for a series of years."

The **Hip Joint**, or round bone, is liable to be strained by the hindfeet slipping and being stretched apart,

or by blows against the side of the stall, when cast, which are not sufficient to dislocate the femur, but strain its ligaments severely. The consequence is an inflammation of the joint, which is evidenced by a dropping of one hip in going, the weight being thrown more upon the sound side than upon the other. This is especially remarkable on first starting, the lameness soon going off in work, but returning at rest. The case is a rare one, but when it does happen, it is very apt to lead to a wasting of the deep muscles of the haunch, which nothing but compulsory work will restore to a healthy condition. The only **treatment** necessary in the early stage of strain of the hip-joint is rest and cooling diet, etc.; but, after six weeks or two months, a gradual return to work is indispensable to effect a cure.

Strains of the Stifle independently of blows, are rare. The **symptoms** are a swelling and tenderness of the joint, which can be ascertained by a careful examination; and on trotting the horse, there is manifested a difficulty or stiffness in drawing forward the hindleg under the belly. The **treatment** must be by bleeding and physicking in the early stage, together with hot fomentations to the part, continued every hour until the heat subsides. After a few days, if the joint is still painful, a large blister should be applied, or what is still better, a seton should be inserted in the skin adjacent.

The **back** itself is liable to strain, independently of the peculiar accident known as "**curb.**" When it occurs there is some heat of the part, with more or less lameness, and neither spavin, thoroughpin, nor curb to

account for them. The injury is seldom severe, and may be relieved by fomentations for a day or two, followed by cold lotions, as presented above, for strain of the back sinews.

The lower part of the posterior surface of the os calcis is firmly united to the cuboid and external metatarsal bone by two strong ligamentous bands, called the calcaneo-cuboid and calcaneo-metatarsal ligaments. The centre of these ligaments is about seven or eight inches below the point of the hock, and when a soft but elastic swelling suddenly makes its appearance there, it may with certainty be asserted that a "**curb**" has been thrown out. The accident occurs somewhat suddenly; but the swelling and inflammation do not always show themselves until after a night's rest, when the part is generally enlarged, hot, and tender. The precise extent of the strain is of little consequence; for whatever its nature the treatment should be sufficiently active to reduce the ligaments to their healthy condition. Some horses have naturally the head of the external small metatarsal bone unusually large, and the hock so formed that there is an angle between the large metatarsal bone and the tarsus, leaving a prominence, which, however, is hard and bony, and not soft and elastic, as is the case with curb. Such hocks are generally inclined to throw out curbs; but there are many exceptions, and some of the most suspicious looking joints have been known to stand sound for years. Curbs are seldom thrown out by very old horses, and usually occur between the commencement of breaking-in, and the seventh or eighth year, though they are not unfrequently met with in the younger colt, being occasioned by his

gambols over hilly ground. The treatment should at first be studiously confined to a reduction of the inflammation; any attempt to procure absorption before this is effected being injurious in the extreme. If there is much heat in the part, blood may be taken from the thigh vein, the corn should be removed, and a dose of physic given as soon as practicable. The curb should then be kept wet (by means of a bandage lightly applied) with the lotion recommended for capped hocks, and this should be continued until the inflammation is entirely gone. During this treatment, in bad cases, a patten shoe should be kept on, so as to keep the hock as straight as possible, and thus take the strain off the ligaments which are affected. After the part has become cool, it may be reduced in size, by causing absorption to be set up; which is best effected by the application of mercury and iodine (both of which possess that power), in such a shape as to cause a blister of the skin. The biniodide of mercury has this double advantage, and there is no application known to surgery which will act equally well in effecting the absorption of a curb. It should be applied in the mode recommended at page 148, and again rubbed on at an interval of about a week, for three or four times in succession, when it will generally be found that the absorption of the unnatural swelling is effected; but the ligaments remain as weak as before, and nothing but exercise (not too severe, or it will inflame them again) will strengthen them sufficiently to prevent a return. Friction with the hand, aided by a slightly stimulating oil (such as neat's-foot and turpentine mixed, or neat's-foot and oil of origanum, or in fact, any other stimulating essential oil), will tend to

strengthen the ligaments, by exciting their vessels to throw out additional fibres; and in the course of time a curb may be considered to be sufficiently restored to render it tolerably safe to use the horse again in the same way which originally produced it.

By **Dislocation** is meant the forcible removal of the end of a bone from the articulating surface which it naturally occupies. In the horse, from the strength of his ligaments, the accident is not common; those that do occur being chiefly in the hip-joint, and in that between the patella and the end of the femur.

Dislocation of the hip-joint is known by the rigidity of the hindleg, which cannot be moved in any direction, and is carried by the horse when he is compelled to attempt to alter his position. There is a flatness of the haunch below the hip, but the crest of the ilium is still there, and by this the accident may be diagnosed from fracture of that part. **No treatment** is of the slightest avail, as the part cannot be reduced, and the horse is useless except for stud purposes. The accident is not very common.

Dislocation of the Patella sometimes becomes habitual, occurring repeatedly in the same horse, apparently from a spasmodic contraction of the external vastus muscle, which draws the patella outwards, and out of the trochlea formed for it in the lower head of the femur. When the cramp goes off, the patella drops into its place again as soon as the horse moves, and no treatment is required. Occasionally, however, the dislocation is more complete, and nothing but manual dexterity will replace the bone in its proper situation. Great pain and uneasiness are expressed, and

the operator must encircle the haunch with his arms, and lay hold of the patella with both hands, while an assistant drags forward the toe, and thus relaxes the muscles which are inserted in it. By forcibly driving the patella into its place, it may be lifted over the ridge which it has passed, and a snap announces the reduction.

The **knee** is the joint most frequently suffering from wound, being liable to be cut by a fall upon it, if the ground is rough; and if the accident takes place when the horse is going at a rapid pace, the skin, ligaments and tendons may be worn through by friction against the plain surface of a smooth turnpike road. Whether the joint itself is injured, or only the skin, the accident is called a "**broken knee**," and for convenience sake, it will be well to consider both under the present head.

When a **broken knee** consists merely in an abrasion of the skin, the attention of the groom is solely directed to the restoration of the hair, which will grow again as well as ever, if the bulbs or roots are not injured. These are situated in the internal layer of the true skin, and, therefore, whenever there is a smooth red surface displayed, without any difference in the texture of its parts, a confident hope may be expressed that there will be no blemish. If the skin is penetrated, either the glistening surface of the tendons or ligaments is apparent, or there is a soft layer of cellular membrane, generally containing a fatty cell or two in the middle of the wound of the skin. Even here, by proper treatment, the injury may be repaired so fully, that the space uncovered by hair cannot be recognized by the ordinary

observer, and not by any one without bending the knee and looking very carefully at it. The **best treatment** is to foment the knee well with water, so as to remove every particle of grit or dirt ; go on with this every hour during the first day, and at night apply a bran poultice to the knee, which should be left on till the next morning. Then cleanse the wound, and apply a little spermacetti ointment, or lard without salt, and with this keep the wound pliant until it heals, which if slight it will in a few days. If the skin is pierced there will generally be a growth *above* it of red flabby granulations, which should be carefully kept down to its own level (not beneath it), by the daily use of blue stone, or, if necessary, of nitrate of silver. As soon as the wound is perfectly healed, if the horse can be spared, the **whole front of the knee and skin** should be dressed with a mild blister, which will bring off the hair of the adjacent parts, and also encourage the growth of that injured by the fall. In about three weeks or a month from its application, the leg will pass muster, for there will be no difference in the color of the old and new hair as there would have been without the blister, and the new will also have come on more quickly and perfectly than it otherwise would.

When the joint itself is opened the case is more serious, and there is a risk not only of a serious blemish, which can seldom be avoided, but of a permanent stiffness of the leg, the mischief sometimes being sufficient to lead to constitutional fever, and the local inflammation going on to the destruction of the joint by ankylosis. The *treatment* should be directed to cleanse and then close the joint, the former object being carried

out by a careful ablution with warm water, continued until there is no doubt of all the dirt and grit, having been removed. Then, if there is only a very small opening in the capsular ligament, it may be closed by a careful and light touch of a pointed iron heated to a red heat. Generally, however, it is better to apply some dry carded cotton to the wound, and a bandage over this, leaving all on for four or five days, when it may be removed and reapplied. The horse should be bled largely and physicked, taking care to prevent all chance of his lying down by racking him up. He will seldom attempt to do this, on account of the pain occasioned in bending the knee, but some animals will disregard this when tired, and will go down somehow. When the cotton is reapplied, if there are granulations above the level of the skin, they must be kept down as recommended in the last paragraph, and the subsequent treatment by blister may be exactly the same. By these means a very extensive wound of the knee may be often speedily cured, and the blemish will be comparatively trifling.

The knee is sometimes punctured by a thorn, causing great pain and lameness. If it can be felt externally, it is well to cut down upon it and remove it; but groping in the dark with the knife among important tendons in front of the knee should not be attempted. The knee should be well fomented, five or six times a day, until the swelling, if there is any, subsides, and, in process of time, the thorn will either show its base, or it will gradually free itself from all its attachments, and lie beneath the skin, from which position it may be safely extracted with the knife.

CHAPTER SEVENTEENTH.

DISEASES OF THE HORSE.

INTERNAL DISEASES—CATARRH—DISTEMPER—BRONCHITIS
—CHRONIC COUGH—ROARING AND WHISTLING—PNEU-
MONIA — CONGESTION — PLEURISY — BROKEN WIND —
PHTHISIS—BLEEDING AT THE NOSE.

WE have hitherto been dealing with diseases and difficulties whose presence is indicated by some external sign, visible to the eye, or to be detected by feeling. We now come to a class of not less important evils, which are strictly internal, and although their effects may be visible in emaciation, or other indications of bad condition, their nature, locality and extent can only be judged of by actual trial and careful observation, and this will be necessary to determine their treatment even after their character has been sufficiently announced.

There is nothing more important than that a horse's wind should be sound. No matter how perfect may be his other machinery, if his respiratory organs are out of order, his elegant shape and serviceable limbs become of little account if he has "bel-lows to mend." The inexperienced observer will here meet with special difficulties, and will do well to pay careful heed to such hints as we are about to give him.

Diseases of the chest are of a most deceptive and treacherous nature, and may gain very dangerous headway before they give any external signs that would be detected except by a practised horseman, but in most of them the first symptoms are a disturbance or difficulty in breathing. These may be manifest even when the horse is quiet, but in some forms are only developed by action. During or immediately after a sharp trot or gallop the breathing will be very apt to "speak for itself."

Dr. Walsch says:

"**Catarrh** may be considered under two points of view; either as an inflammation of the mucous membrane of the nasal cavities, accompanied by slight general fever; or as an ephemeral fever of three or four days' duration, complicated with this condition of the nose. The latter is, perhaps, the more scientific definition, but for common purposes it is more convenient to consider it as mainly consisting in the most prominent symptom. There is invariably some degree of feverishness, sometimes very considerable, at others so slight as to be easily passed over. Usually the pulse is accelerated to about forty or fifty, the appetite is impaired, and there is often sore throat, with more or less cough. On examining the interior of the nostrils, they are more red than natural, at first dry and swollen, then bedewed with a watery discharge which soon becomes yellow, thick, and, in bad cases, purulent. The eyes are generally involved, their conjunctival coat being injected with blood, and often some slight weeping takes place, but there is always an expression of sleepiness or dullness, partly owing to the local condition of the organ,

and partly to the general impairment of the health. The disease is caused, in most instances by a chill, either in the stable or out, but sometimes, even in the mildest form, it appears to be epidemic. The **treatment** will greatly depend upon the severity of the seizure; usually, a bran-mash containing from six drachms to one ounce of powdered nitre in it, at night, for two or three consecutive periods, will suffice, together with the abstraction of corn, and, if the bowels are confined, a mild dose of physic should be given. In more severe cases, when there is cough and considerable feverishness, a ball composed of the following ingredients may be given every night:—

Take of Nitrate of Potass	...	2 drachms.
Tartarized Antimony	... ..	I "
Powdered Digitalis	... ..	$\frac{1}{2}$ "
Camphor	... ..	$1\frac{1}{2}$ "

Linseed meal and boiling water enough to make into a ball.

“If the throat is sore, an embrocation of equal parts of oil, turpentine, tincture of cantharides, and hartshorn, may be rubbed in night and morning.

“Should the disease extend to the bronchial tubes, or substance of the lungs, the treatment for bronchitis or pneumonia must be adopted.

“The stable should be kept cool, taking care to make up for the difference in temperature by putting on an extra rug; water should be allowed *ad libitum*, and no corn should be given.

“Sometimes the discharge becomes chronic, and it is then known by the name *ozena*.

"**Influenza**, or distemper, may be considered to be an epidemic catarrh, but the symptoms are generally more severe, and leave greater prostration of strength behind them. They also require more careful treatment, which must be specially adapted to the attack, for remedies which will arrest the disease in one year will totally fail the next time that the epidemic prevails. The fever of late years has had a tendency to put on the typhoid type, and **BLEEDING**, which formerly was often beneficial, is now **COMPLETELY FORBIDDEN**. The **symptoms** are at first similar to those already described as pertaining to common catarrh, but after a few days the accompanying fever is more severe than usual, and does not abate at the customary period. The appetite is altogether lost, and the appearance of the patient is characteristic of severe disease rather than of a trifling cold. It is, however, chiefly from the fact that a number of horses are seized with similar symptoms, either at the same time or rapidly following one another, that the disease is recognized. It usually prevails in the spring of the year, or in a wet and unhealthy autumn. Sometimes almost every case runs on to pneumonia, at others the bronchial mucous membrane alone is attacked; but in all there is extreme debility in proportion to the apparent nature of the disease. The ordinary appearances exhibited in recent epidemics have been as follows:—The first thing observed is a general slight shivering, accompanied by a staring coat. The pulse is weak and slightly accelerated, but not to any great extent; the mouth feels hot; the eyes and the nostrils are red: the belly is tucked up; there is no appetite; cough, to a varying extent, begins to show itself; and

there is generally a heaving of the flanks. The legs and feet are not cold as in pneumonia, but beyond this they afford no positive signs. The cellular membrane around the eyes and of the legs, generally swells about the second day, and often the head and limbs become quite shapeless from this cause. In the early stage the bowels are often relaxed, but afterwards they are as frequently confined. Sore throat is a very common complication, but it is not by any means an invariable attendant on influenza. It is, however, somewhat difficult to ascertain its existence, as in any case there is no appetite for food. The **treatment** should be conducted on the principle of husbanding the strength, and, unless urgent symptoms of inflammation show themselves, the less that is done the better. If the trachea or larynx is involved only slightly, counter-irritation, by means of a liquid blister, must be tried, without resorting to strong internal medicines; but if serious mischief ensues, the case must, to a certain extent, be treated as it would be when coming on without the complication of influenza, always taking care to avoid bleeding, and merely acting on the bowels by gentle aperients, and on the skin and kidneys by the mildest diaphoretic and diuretic. The following is the ordinary plan of treatment adopted:

Take of Spirit of Nitric Ether ...	1 oz.
Laudanum	4 drachms.
Nitrate of Potass	3 drachms.
Water	1 pint.

Mix, and give a drench, night and morning.

"By constantly offering to the horse thin gruel (taking care that it does not become sour), and no plain water, sufficient nourishment may be given, as his thirst will induce him to drink.

"During the stage of convalescence the greatest care must be taken. At first, as soon as the cough has somewhat subsided, a mild stomachic ball will be desirable, such as

Take of Extract of Gentian	...	6 drachms.
Powdered Ginger	... ..	2 drachms.
		Mix.

Afterwards, if the case goes on favorably, and the appetite returns, the restoration may be left to nature, giving the horse by degrees his usual allowance of corn, and adding to his morning and evening feed one drachm of sulphate of iron in fine powder. It must not be attempted to give this until the appetite is pretty keen or the horse will be disgusted, and will probably refuse his corn altogether.

"Should typhoid symptoms be clearly established, the case must be treated according to the directions hereafter laid down for typhus fever.

Bronchitis is an inflammation of the mucous membrane lining the bronchi, and almost invariably extending to these parts through the trachea, from the larynx and nasal passages, which are primarily affected as in ordinary cold. The membrane in the early stage becomes filled with blood, and as a consequence the diameter of the tubes is diminished, attended by some difficulty, and increased rapidity of breathing. After a time a frothy mucous is poured out from it, and this

still further interferes with respiration, and necessitates a constant cough to get rid of it. These **symptoms** are always present, but they will vary greatly in intensity, and in the rapidity with which they progress, from which circumstances bronchitis is said to be **acute** or **chronic** as the case may be. **In the acute form** there are also several variations, and veterinary writers are in the habit of again subdividing it into acute and sub-acute, but the two leading divisions are sufficient for all practical purposes. It begins with the usual premonitory appearance of a severe cold, accompanied by a staring coat, and entire loss of appetite. The breathing is somewhat quicker than natural, and the pulse is raised to sixty or seventy. The legs remain of the usual temperature, and there is a hard dry cough, the lining membrane of the nostrils being intensely red, and in severe cases dry and swollen. On auscultation there is a dry rattling sound, very different from the crepitation of pneumonia, and as soon as mucous is secreted, succeeded by gurgling, and soap-bubble sounds, easily distinguished when once heard. If the attack goes on favorably, the cough becomes loose, and there is a free discharge of mucous, both from the lungs, as evidenced by the nature of the cough, and from the nostrils as shown by the running from them. On the other hand, the promise is unfavorable when the breathing is very laborious, with the legs extended, and the cough constant and ineffectual in affording relief. Should no relief be afforded, death takes place a week or ten days after the onset of the disease, from suffocation. The **treatment** should depend greatly upon the urgency of the inflammation, which only an experienced eye can

judge of. If slight, nitre and tartar emetic internally, and a blister (to one or both sides, according to the extent of bronchi involved), will suffice, but in very severe cases blood must be taken at the onset, or it will be impossible to control the inflammation. Bleeding should be avoided if it is judged prudent to do so, for of late years the type of diseases has changed so much in the horse, that he is found to bear loss of blood badly. Nevertheless, it is not wise to lay down the rule that it is never desirable. The bowels must be acted on by the ordinary physic ball, resorting to raking and clysters, if the time cannot be afforded for the usual laxative preparation. For the special control of the morbid state of the membrane the following ball will be found advantageous :

Take of Digitalis	...	...	$\frac{1}{2}$ drachm.
Calomel	...	...	$\frac{1}{2}$ drachm.
Tartar Emetic	...	...	60 to 80 grains
Nitre	...	...	2 drachms.

Mix with treacle, and give twice a day.

Should the disease continue after the blister is healed, a large seton may be put in one or both sides with advantage.

Chronic Bronchitis seldom exists except as a sequel to the acute form, and after adopting the balls recommended for that state, it may be treated by attention to the general health, a seton in the side, and the exhibition of an EXPECTORANT BALL twice a day, composed of the following materials :

Take of Gum Ammoniacum ...	...	...	...	$\frac{1}{2}$ oz.
Powdered Squill ...	...	...	...	1 drachm.
Castile Soap ...	...	...	...	2 drachms.

Mix and make into a ball.

By **Chronic Cough** is understood a cough that comes on without any fever or evidences of the horse having taken cold. It differs in this respect from chronic bronchitis, which generally supervenes upon the acute form, and is always attended in the early stage by feverishness. It appears probable that chronic cough is dependent upon an unnatural stimulus to the mucous membrane, for it almost always makes its appearance when much corn is given without due preparation, and ceases on a return to green food. It is, therefore, very commonly termed a stomach cough. The **Symptoms** are all summed up in the presence of a dry cough, which is seldom manifested while in the stable, but comes on whenever the breathing is hastened by any pace beyond a walk. Two or three coughs are then given, and the horse perhaps is able to go on with his work, but after resting for a few minutes, and again starting, it comes on again, and annoys the rider or driver by its tantalizing promise of disappearance followed by disappointment. Very often this kind of cough is caused by the irritation of worms, but any kind of disorder of the digestive organs appears to have the power of producing it. The usual *treatment* for chronic bronchitis seems here to be quite powerless, and the only plan of proceeding likely to be attended with success, is to look for the cause of the irritation, and remove it. Sometimes this will be found in a hot stable,

the horse having previously been accustomed to a cool one. Here the alteration of the temperature by ten or fifteen degrees will in a few days effect a cure, and nothing else is required. Again, it may be that the corn has been overdone, in which case a gentle dose of physic, followed by a diminished allowance of corn, and a bran-mash twice a week, will be successful. If the stomach is much disordered, green food will be the best stimulus to a healthy condition, or in its absence a few warm cordial balls may be tried. The existence of worms should be ascertained in doubtful cases, and if they are present, the proper remedies must be given for their removal. Linseed oil and spirit of turpentine, which are both excellent worm remedies, are highly recommended in chronic cough, and whether or not their good effect is due to their antagonism to worms, they may be regarded as specially useful.

"A very successful combination is the following mixture ;

Take of Spirit of Turpentine	...	2 oz.
Mucilage of Acacia	...	6 "
Gum Ammoniacum	...	$\frac{1}{2}$ "
Laudanum ...	...	4 "
Water	... ..	2 quarts.

Mix, and give half a pint, as a drench, every night ; the bottle must be well shaken before pouring out the dose.



LARYNGITIS, ROARING, WHISTLING, ETC.

“One of the most common diseases among horses, is the existence of some mechanical **impediment** to the **passage** of the **air** into the **lungs** causing the animal to “make a noise.” The exact nature of the sound has little practical bearing on the cause that produces it; that is to say, it cannot be predicated that roaring is produced by laryngitis; nor that whistling is the result of a palsy of some particular muscle, but undoubtedly it may safely be asserted that all lesions of the larynx, by which the shape and area of its opening are altered and diminished, are sure to have a prejudicial effect upon the wind, and either to produce roaring, whistling, wheezing, or trumpeting, but which would result it might be difficult to say, although the precise condition of the larynx were known, which it cannot be during life. Until recently veterinary surgeons were puzzled by often finding on examination of a roarer’s larynx after death no visible organic change in the opening, and many were led to imagine that this part could not be the seat of the disease. On a careful dissection, however, it is found that a muscle or muscles whose office it is to dilate the larynx is wasted and flabby. The other muscles are perhaps equally atrophied, but as their office is to close the opening, their effects are not equally injurious, and at all events are not shown by producing an unnatural noise.

“By **acute laryngitis** is meant a more than ordinary inflammation of the larynx, and not that slightly morbid condition in which the mucous membrane of

that organ is always involved in 'the passage of a cold into the chest.' In the latter state the ear detects no unusual sound, and indeed there is plenty of room for the air to pass. But in true laryngitis, on placing the ear near the throat, a harsh rasping sound is heard, which is sufficient at once to show the nature and urgency of the symptoms. The mucous membrane is swollen, and tinged with blood; the rima glottidis is almost closed, and the air in passing through it produces the sound above described, which, however, is sometimes replaced by a hissing one. In conjunction with these well marked symptoms there is always a hoarse cough of a peculiar character, and some considerable fever, with frequent respiration, and a hard, wiry pulse of seventy to eighty. The **treatment** must be of the most active kind, for not only is life threatened, but even if a fatal result does not take place, there is great danger of permanent organic mischief to the delicate apparatus of the larynx generally from the effusion of lymph into the submucous cellular membrane. A full bleeding should at once be practised, and repeated at the end of twelve hours if there is no relief afforded and the pulse still continues hard. The hair should be cut off the throat, and the tincture of cantharides brushed on in a pure state until a blister arises, when the part may be constantly well fomented, to encourage the discharge. Large doses of tartar emetic, calomel, and digitalis, must also be given, but their amount and frequency should be left to an **experienced veterinarian**, the preliminary bleeding and blistering being done in his absence to save time. It is a case in which medicine must be pushed as far as can be

done with safety, and this cannot well be left to any one who is not well acquainted with its effects, and with the powers of the animal economy. Gruel is the only food allowed during the acute stage, and there is seldom time to have recourse to aperient physic until the urgent symptoms are abated, when an ordinary dose may be given. During convalescence the greatest care must be taken to prevent a relapse, by avoiding all excitement either by stimulating food or fast exercise.

“**Chronic Laryngitis** may occur as the result of the acute form above described, or it may come on gradually, without any violent inflammation preceding it. In either case the *symptoms* are similar in their nature to those met in the acute form, but less in degree. The noise made is not nearly so harsh, and can often hardly be heard on the most careful examination. The peculiar harsh, grating cough is, however, always present, and by it the nature of the case may generally be easily made out. The disease often accompanies strangles, although in nine cases out of ten it is overlooked. Very commonly, however, it makes its ravages in so insidious a manner that no suspicion is felt of its presence, until the horse begins to make a noise, though he must in all probability have shown by the cough peculiar to the complaint, that it has been working its way for some weeks at least.”

Whatever may be the cause there can be no doubt that the **treatment** is most troublesome, and often baffles the skill of the most accomplished veterinarian. Blistering is not so useful as counter-irritation by a seton, which must be inserted in the loose skin beneath

the jaw, as close as possible to the larynx. This alone will do much towards the cure, but no pains must be spared to assist its action by a cooling regimen, consisting of bran-mashes, and if in the spring or summer, green food, or in the winter, carrots. Corn must be entirely forbidden, and the kidneys should be encouraged to act freely by two or three drachms of nitre given in the mash twice a day. When the case is very intractable, the nitrate of silver may be applied to the part itself by means of a sponge fastened to a piece of flexible cane or whalebone. The mouth should then be kept open with the ordinary balling iron, and the sponge rapidly passed to the situation of the top of the larynx, and held there for a second, and then withdrawn.

Dr. Walsch says:

“Roaring is the bugbear of the purchaser at the hammer, and not without good reason. The most experienced veterinarian, or dealer will often fail to ascertain its existence, in spite of all the artifices he may call into play. Not the slightest sound is heard during a state of quiescence, or even when the horse is trotted or galloped for the short distance which “**the ride**” will afford. The blow on the side given with due artistic effect elicits no grunt, and yet the animal is a confirmed roarer, and not worth a shilling perhaps for the purpose to which he is intended to be devoted. On the other hand, many a sound horse is condemned as a roarer for giving out the obnoxious grunt; and though there is no doubt that this sign may be relied on in a great many cases, yet it cannot be accepted as either negatively or positively a certain proof. The only real trial

is the noiseless gallop on turf or plough, when the ear can detect the slightest sound, and can distinguish its exact nature, and the precise spot from which it proceeds. Many a horse will, when he is excited, make a harsh noise in his breathing, accompanied by a kind of "gluck," proceeding from a spasmodic flapping of the velum palati; but on galloping him all this goes off, and he may probably exhibit excellent wind. Such cases I have many times known, and they would be condemned as unsound by those who have had little experience, or are content with a careless and inefficient trial. Stallions are particularly prone to make this kind of noise, and it is extremely difficult to ascertain their soundness in this respect by any means which can be safely resorted to. The causes of roaring are of three kinds: 1st, Inflammation, which has left a thickening or ulceration of the mucous membrane, or a fungous growth from it; 2nd, Paralysis of the Muscles; and 3rd, an alteration of the shape of the Cartilages of the Larynx, produced by tight reining.

"IN ROARING PRODUCED BY AN ULCERATED OR THICKENED CONDITION OF THE MUCOUS MEMBRANE, or by a fungus growth, the sound elicited is always the same in proportion to the rapidity of respiration. None of the ordinary expedients by which the breath is introduced in a modified stream (such as a full meal, or pressure on the nostrils or windpipe), will be of much avail, and the horse roars sturdily whenever his pace is sufficiently accelerated. If a horse so affected can be made to grunt by the blow on the side, the sound will always indicate the disease, for it will be harsh and rough, and not the natural grunt of the animal. It is

usually supposed that no treatment can be of the slightest avail here.

"Setons, blisters, and embrocations are all useless, as has been proved in numberless cases; and beyond the palliation which can be afforded by employing the horse only at such a pace as his state will allow, nothing else can be suggested.

"Where paralysis of the muscles that open the rima glottidis is the seat of the roaring, no plan has yet been suggested which is of the slightest avail.

"An alteration in the shape of the cartilages, so as to permanently change their form, is, I believe, the least common of all the causes of roaring. Pressure for a very long time will be required to effect this and far more than suffices to paralyze the nerve. Cases, however, are recorded, and the parts have been preserved, so that there can be no doubt of their occasional occurrence. No treatment can be of the slightest service.

"Although roaring, in all its varieties, may be said to be generally incurable, yet it may be greatly palliated by general attention to the state of the lungs and stomach, by proper food.

"Highblowing is a perfectly healthy and natural habit, and cannot be confounded with roaring by any experienced horseman. It is solely confined to the nostrils; and the noise is not produced in the slightest degree during inspiration, but solely during the expulsion of the air, which is more forcible and rapid than usual, and accompanied by a vibratory movement of the nostrils, which is the seat of the noise. Roaring, on the

contrary, continues during inspiration, as well as expiration; and by this simple test the two may readily be distinguished. Most highblowers have particularly good wind, of which the celebrated Eclipse is an example, for there is no doubt that he was addicted to the habit.

Whistling (and piping, which is very similar to it), are produced by the same causes as roaring, in an exaggerated condition. Thus, a roarer often becomes a whistler as the rima glottidis is more and more closed by disease; on the other hand, the whistler is never converted into a roarer. The noise made is seldom a decidedly shrill whistle, but it has more resemblance to that sound than to roaring, and the name may well be retained, as descriptive of it. Whistlers are always in such a state of confirmed disease, that treatment is out of the question—indeed they can only be put to the very slowest kind of work.

“**Wheezing** is indicative of a contracted condition of the bronchial tubes, which is sometimes of a spasmodic nature, and at others is only brought on during occasional attacks after the exposure to the cold. The *treatment* should be that recommended for chronic bronchitis, which is the nature of the disease producing these symptoms.

Pneumonia, or peripneumonia, must be examined, with a view, first, to its intensity, whether *acute* or *sub-acute*; and secondly, as to its effects, which may be of little consequence, or they may be so serious as to completely destroy the subsequent usefulness of the patient. It is not, therefore, alone necessary to provide against death by the treatment adopted, but due care must also

be taken that the tissue of the lungs is not disorganized by a deposition of lymph, or of matter, so as to lead in the one case, to a consolidation of their air-cells, and in the other, to the formation of a large abscess, and consequent destruction of substance. The former is a very common sequel of pneumonia. In very severe cases, gangrene of the lungs is induced: but as death almost always speedily follows this condition, it is not necessary to consider it, excepting as bearing upon the fatal result.

The *cause* of pneumonia may be over-exertion, or it may come on as a primary disease after exposure to cold: or it may follow upon bronchitis when neglected and allowed to run on without check. For these reasons when the lungs are evidently congested, no pains should be spared to relieve them by causing the skin to act, before the aid of nature is invoked, since it can never be certain that she will stop short at the proper point.

Congestion of the Lungs is too often neglected and allowed to go on to inflammation. Veterinary surgeons, indeed, are seldom called in before this stage has run its course and inflammation is established. The great mass of horse-masters are wholly ignorant of its action, and we shall therefore endeavor to lay down instructions which may be beneficial to those who are so unlucky as to have a horse with congested lungs, either caused by over-exertion, or by a chill, or by a combination of the two, as most frequently happens.

When a horse is put to too severe and rapid, especially too sudden and heating labor, when he is too high

in flesh, or when he is but just up from pasture, and has had no opportunity of accustoming himself to the changed order of things, the blood is apt to collect and stagnate in his lungs, from a defect in the circulating apparatus, and he becomes absolutely choked from a want of that decarbonization which is necessary to his existence. He respire freely, but circulation in his lungs almost ceases, and in spite of his hurried panting he is almost as completely suffocated as if a cord was tied around his neck. His eyes and nostrils become bloodshot and purple, the vessels being filled with carbonized blood, his heart beats feebly, and his every motion and the expression of his face indicates his distress. Many books on horsemanship recommend copious bleeding, and in slight cases it may do very little harm. Even in them it will do no good, and in severer cases it will destroy the only chance remaining. What the horse wants is not so much depletion as stimulation. Turn his head to the wind; bathe his head and chest in cold water; give him some mild whiskey and water, a quart of that or of ale, and let him stand still awhile. Then lead him to the nearest good shelter, and leave him there for a good rest. This is the best way of treating this description of congestion.

Dr. Walsch prescribes as follows:

“When congestion shows itself as the result of a chill, the following *symptoms* are displayed:—First and foremost there is rapid and laborious breathing, the horse standing with his legs wide apart, his head thrust straight forward, and his flanks heaving. The skin is generally dry, but if there is any sweat it is a cold one. The legs are icy cold, and also the ears. The whites

of the eyes and lining of the nostrils are of a purplish hue, but not very deep in color. The pulse is slightly accelerated (from forty to fifty), but not hard and incomprehensible; and lastly, the attack is of recent duration. These signs, however, are not to be fully relied on as marking congestion rather than inflammation, without having recourse to an examination of the lungs by means of the ear. Placing it against the side of the chest, in inflammation there would be certain marked sounds, presently to be described, whilst in the state we are now considering they are wholly absent, and all that is heard is the usual respiratory murmur slightly increased in intensity. It is of the utmost importance to make out exactly the nature of the case, for the **treatment** should be very different in congestion and inflammation. If in the former condition the blood can only be drawn into the skin, relief is at once afforded, and all danger is at an end; but in the latter, though some slight advantage would be gained, the progress of the disease would not be materially checked. To produce this determination of blood to the skin without loss of time, is sometimes very difficult; but by the application of hot water and blankets it may generally be accomplished. Two men, supplied with a tub of very hot water and plenty of clothing, should be rapid in their movements, and proceed as follows:—Have an assistant ready to strip the patient when ordered, then, dipping a blanket in the water, it is taken out and partially wrung, leaving as much water in its meshes as it can hold without dripping; as soon as it is cool enough for the human hand to bear its pressure, it should be gently but quickly laid upon the

horse's back, and the rug, which has just come off, while still warm, placed over it, with two or three more over all, the number depending upon the temperature of the air. Another smaller rug may in the same way be wetted, and applied to the neck, covering it with two or three hoods, but taking care to avoid pressure upon the windpipe. The legs also should be wrapped in flannel bandages made as hot as possible before the fire, but dry. In the course of half an hour, if the skin of the parts uncovered does not become warm, and show evidences of sweating coming on, another rug must be dipped in the same way, and substituted quickly for the first. Usually, however, the desired effect is produced within twenty minutes, and then great care and some little tact are required to manage the operation. If the sweating is allowed to go on beyond a certain point, exhaustion is produced, attended by almost as much danger as inflammation; while on the other hand, in attempting to moderate the action of the skin, risk is incurred of a chill, and thus upsetting all the benefit which might otherwise have been derived. But by throwing open the doors to the external air, which may freely be admitted as soon as the skin acts, and by reducing the number of additional rugs, the amount of sweat given off may be kept within due bounds, and in the course of two or three hours the previously wetted rug or blanket may be removed and a dry, warm one substituted for it, but the assistants must be quick and handy in effecting the change. Many a case of inflammation of the lungs, kidneys, or bowels might be stopped at once by the adoption of this plan; but the misfortune is, that it re-

quires all the skill and tact of the veterinary surgeon, first of all to understand the case, and afterwards to manage its treatment.

"The symptoms of Acute Pneumonia are a quick and distressed respiration, averaging about sixty inspirations in the minute. Pulse quick (from seventy to eighty-five); hard, often small, but always compressible. Nostrils distended, and the lining membrane red (except in the last stage when suffocation is imminent). Cough short, and evidently giving pain, which occasions it to be checked as much as possible. Legs and ears generally cold, often icy. Feet wide apart: evidently with an instinctive desire to dilate the chest as much as possible. On putting the ear to the chest, if the attack is very recent, there will be merely a greatly increased respiratory murmur; but when fully developed there may be heard a crepitant rattling, which is compared to the crackling of a dried bladder; but I confess that I could never make out the similarity between the two sounds. In the later stages this is succeeded by an absence of all sound, owing to the consolidation of the lungs, or by mucous rattles depending upon the secretion of mucous. On tapping the exterior of the chest with the ends of the fingers (percussion,) the sound given out is dull in proportion to the extent of mischief, the effect of pneumonia being to convert the spongy texture of the lungs into a solid substance like liver. The treatment will greatly depend upon the stage of the disease, the age and constitution of the horse, and the nature of the prevailing epidemic, if there is one. In modern days bleeding is very badly borne, either by man or horse, nevertheless few cases of genuine

pneumonia will be saved without it. Sufficient blood must be taken to make a decided impression on the circulation, without which the inflammation will not be mastered. The quantity necessary for this cannot be fixed, because the effect will vary so materially, that the abstraction of three or four quarts of blood in one case will do more than double or treble that quantity in another. A large orifice must be made in the vein, and it must not be closed until the lining membrane of the nose or the white of the eye is seen to have become considerably paler. It may possibly even then be necessary to repeat the operation six hours afterwards, or next day, according to the symptoms. The rule should be followed of taking enough, but not a drop too much, for blood removed from the circulation takes a long time to replace. With regard to medicine, tartar emetic is the only drug which seems to have much influence over pneumonia, and it must be given every six hours in drachm doses, with from a half drachm to a drachm of powdered digitalis, or white hellebore, to keep down the pulse, and two or three drachms of nitre, to increase the action of the kidneys. Unless the bowels are confined no aperient should be given, and if necessary only the mildest dose should be used. The diet should consist of bran mashes, gruel, and a little hay, or green food, if the season of the year allows. A cool airy stable, and warm clothing are indispensable in this disease. When the first violence of the attack has subsided, a large blister on the side of the chest will afford great relief, and when it ceases to act if the disease is not entirely cured, a second may be put on the other side.

“**Sub-acute Pneumonia** differs in no respect from the acute form, excepting in degree, and the symptoms and treatment will vary only in proportion.”

Pleurisy is characterized by a very peculiar respiration, the expirations being much longer than the inspirations, owing to the pain which is given by the action of the muscles necessary for the latter, while the former, if the chest is allowed quietly to fall, is almost painless. Nevertheless, the breathing is quicker on the whole than natural. The pulse is quick, small, and incompressible. Nostrils and eyes of a natural color, and the former are not dilated. The countenance is anxious, and the legs are rather drawn together than extended, as in bronchitis and pneumonia, and they are not colder than usual. There is a short hurried cough, with great restlessness, and the sides are always painful on pressure; but this symptom by itself is not to be relied on, as it is present in pleurodynia, which will be presently described.

The **treatment** should consist of copious bleeding, followed by a mild purgative, and the same ball as recommended for pneumonia, with the addition of half a drachm of calomel. Blisters are not desirable to be applied to the sides of the thorax, as there is so little space between the two surfaces of the pleura and the skin that they are apt to do harm by immediately irritating the former, rather than to act beneficially by counter-irritation of the skin. A large rowel may, however, be placed in the breast with advantage.

Between **pleurodynia** and the last there is some similarity in the symptoms; but in their nature, and in

the treatment required, they are widely separated. It is therefore necessary that they should not be confounded, for in the one case blood-letting and other active measures may be unnecessarily adopted, and in the other a fatal result will most probably occur for want of them. In pleuritis there is a quick pulse, with general constitutional disturbance, which will serve to distinguish it from pleurodynia, besides which, it is rarely that we meet with the former without some other affections of the lungs co-existing. When, therefore a horse is evidently suffering from acute pain in the walls of the thorax, unaccompanied by cough hurried breathing, quick pulse or fever, it may safely be gathered that the nature of the attack is a rheumatism of the intercostal muscles (pleurodynia), and not pleurisy. In **treating** it bleeding and tartar emetic must be carefully avoided, and hot mustard and vinegar rubbed into the sides will be the most likely remedy to afford relief.

When a horse has long been subject to a chronic cough, and, without losing appetite, wastes away rapidly, it may be assumed that he is a victim to phthisis, and especially if he is narrow-chested and has long shown signs of short wind. On examining the chest by the ear, it will be found to give out sounds of various kinds, depending upon the exact state of the lungs; but in most cases there will be great dulness on percussion, owing to the deposit of tubercles, in which the disease consists. In a confirmed case **no treatment** will avail, and the poor animal had better be destroyed. When the attack is slight, the progress of the disease may be stayed by counteracting inflammation in the ordinary way, avoiding loss of blood when possible.

A **broken-winded** horse can be detected at once by any horseman possessed of experience, from the peculiar and forcible double expiration. Inspiration is performed as usual, then comes a rapid but not violent act of expiration, followed by forcible repetition of the same, in which all the muscles of respiration, auxiliary and ordinary, are called into play. This is of course most marked when the horse has been galloped, but even when he is at rest the double expiration is manifest almost at any ordinary distance from the observer. The disease almost (if not quite) invariably consists in emphysema, or entrance of the air into unnatural cells, which is retained there, as the urine is in the bladder, from the valvular nature of the openings, and cannot be entirely expelled, nor in the slightest degree, without calling into play all the muscles of the chest. The presence of unchanged air is a constant source of irritation to the lungs, and although sufficient may be expired easily enough to carry on their functions while the body is at rest, yet instinctively there is a desire to get rid of the surplus, and hence the two acts of respiration. Immediately after this second act the muscles relax, and the flank falls in, and this it is which catches the eye in so remarkable a manner.

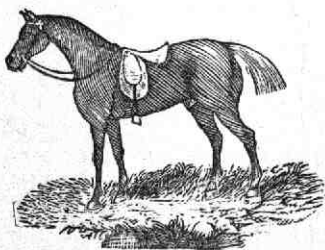
The **treatment** can only be palliative, as there is no recognized cure for the disease, though M. Hew of Chaumont, has lately published a report of ten cases in which treatment by arsenic, given with green food or straw, and in some cases bleeding, was perfectly successful. The arsenic was given to the extent of fifteen grains daily, and at the end of a fortnight the symptoms of broken-wind were completely removed; but it is im-

possible to say whether the cure was permanent. It is known, however, that one of them relapsed after three months, but speedily yielded to a repetition of the treatment. It may certainly be worth while to try the experiment of the effect of arsenic where a broken-winded horse is valuable in other respects. Broken-winded horses should be carefully dieted and even then confined to slow work. The water should never be given within an hour of going out of the stable, but it is better to leave a constant supply, when too much will never be taken. Carrots are peculiarly suited to this disease, and a diet of bran mixed with carrots, sliced, has sometimes been known to relieve a broken-winded horse most materially.

Thick wind is the horseman's term for any defective respiration, unaccompanied by a noise, or by the signs of emphysema just alluded to. It usually follows pneumonia, but it may arise from chronic bronchitis. **No treatment** will be of any service except such as will aid the play of the lungs mechanically, by avoiding overloading the stomach.

The horse is very subject to hemorrhage from the nose, coming on during violent exertion. Fat over-fed horses are the most likely to suffer from hemorrhage; but most people are aware of the risk incurred in over-riding or driving them, and for this reason they are not so often subject to this accident (for such it is rather than a disease) as they otherwise would be. It is unnecessary to describe its *symptoms*, and the only point necessary to inquire into is, whether the lungs or the nasal cavities are the seat of the rupture of the vessel. In the former case the blood comes from both nostrils,

and is frothy ; while in the latter it generally proceeds from one only, and is perfectly fluid. The **treatment** should consist in cooling the horse down by a dose of physic and a somewhat lower diet ; but if the bleeding is very persistent, and returns again and again, a saturated solution of alum in water may be syringed up the nostril daily, or if this fails, an infusion of matico may be tried, which is far more likely to succeed. It is made by pouring half a pint of boiling water on a drachm of matico-leaves, and letting it stand till cool, when it should be strained and is fit for use.



CHAPTER EIGHTEENTH.

DISEASES OF THE HORSE

THE ABDOMEN AND ITS APPENDAGES—SORE THROAT—
STRANGLES—LEMPAS—GASTRIS—DYSPEPSIA—BOTS AND
THEIR HISTORY.

THE horse, as well as his master, is subject to many painful and dangerous diseases of the abdominal viscera and their appendages. They generally exhibit themselves externally, more or less, by emaciation, and a flabby state of the muscles, accompanied by a "starving" coat different in character and feel to that produced by overwork and poor feeding. They are not considered "unsoundness" and for the most part yield readily to treatment, but the latter should be prompt and wise.

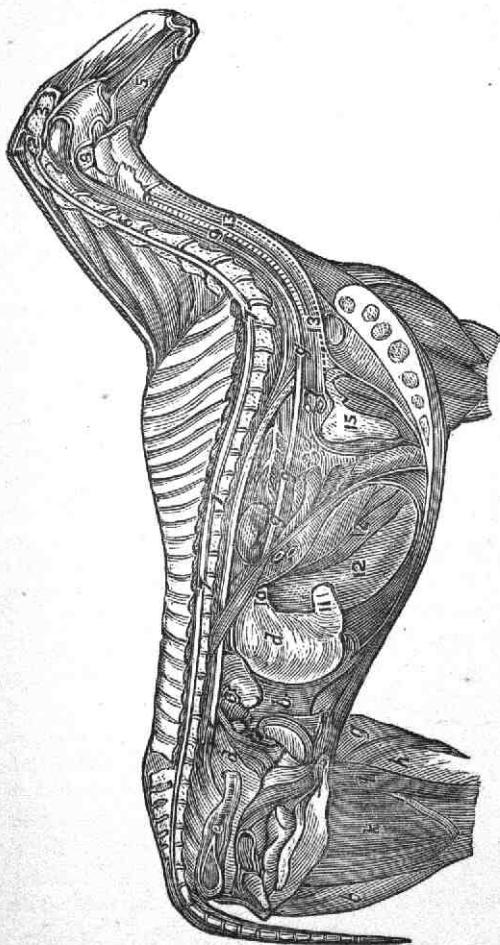
Before dealing with those difficulties which come more manifestly under the proper scope of this chapter we will say a few words more about the mouth and throat, as being in a manner connected therewith.

Sore Throat is readily detected by swelling or hardness of the parts, with difficulty in swallowing. External sweating should at once be resorted to. The tincture of cantharides diluted with an equal part of spirit of turpentine, and a little oil, may be rubbed in with a sponge until it produces irritation of the skin, which in a few hours will be followed by a discharge

from the part. Six or eight drachms of nitre may be dissolved in the water which the horse drinks. He will not like it, but thirst will force him to take it. If he eats with more ease than he drinks, the nitre may be given in a bran-mash instead of in the water.

STRANGLES.

Between the third and fifth year of the colt's life he is generally seized with an acute swelling of the soft parts between the branches of the lower jaw, accompanied by more or less sore throat, cough and feverishness. These go on increasing for some days, and then an abscess shows itself, and finally bursts. The salivary glands are often involved but the matter forms in the cellular membrane external to them. The *treatment* should be addressed to the control of constitutional symptoms by the mildest measures, such as bran-mashes with nitre in them, abstraction of corn, hay, tea, etc. At the same time the swelling should be poulticed for one night, or thoroughly fomented two or three times, and then blistered with the tincture of cantharides. As soon as the matter can plainly be felt, it may be let out with a lancet; but it is very doubtful whether it is not the best plan to permit the abscess to break. The bowels should be gently moved, by giving a pint, or somewhat less, according to age, of castor oil; and afterwards two or three drachms of nitre with half a dram of tartar emetic may be mixed with the mash twice a day, on which food alone the colt should be fed, in addition to gruel, and a little grass or clover, if these are to be had, or if not, a few steamed carrots. The



ABDOMEN AND PELVIS, WITH THE INTESTINES AND LIVER REMOVED, THE THORAX, ETC.

- | | |
|---|---|
| <p><i>a.</i> The Stomach (10 Cardiac orifice.—11 Pylorus.)</p> <p><i>b.</i> Spleen.</p> <p><i>c.</i> Left kidney.</p> <p><i>d.</i> Broad ligament of the uterus, with left cornu and ovary displayed.</p> <p><i>e.</i> Rectum.</p> <p><i>f.</i> Anus.</p> <p><i>g. h. i. j. k. l.</i> Internal muscles of the thigh.</p> <p>1. Occiput.</p> <p>2. Cerebellum.</p> <p>3. Cerebrum.</p> | <p>4. Nasal membrane.</p> <p>5. Tongue.</p> <p>6. 6. Cervical vertebræ.</p> <p>7. 7. 7. 7. Spinal cord.</p> <p>8. Pharynx.</p> <p>9. 9. 9. Œsophagus.</p> <p>10. Cardiac orifice of the stomach passing through the diaphragm.</p> <p>11. Pylorus.</p> <p>12. 12. Posterior surface of the diaphragm.</p> <p>13. 15. Trachea.</p> <p>14. Lungs.</p> <p>15. Heart.</p> |
|---|---|



disease has a tendency to get well naturally, but if it is not kept within moderate bounds it is very apt to lay the foundation of roaring or whistling. Any chronic swelling which is left behind may be removed by rubbing in a weak ointment of biniodide of mercury (one scruple or half drachm to the ounce).

Lampas is an active inflammation of the ridges, or **bars**, in the roof of the mouth, generally occurring in the young horse while he is shedding his teeth, or putting up the tushes. Sometimes, however, it comes on, independently of this cause, from over-feeding with corn after a run at grass. The mucous membrane of the roof of the mouth swells so much that it projects below the level of the nippers, and is so tender that all hard and dry food is refused. The **treatment** is extremely simple, consisting in the scarification of the part with a sharp knife and lancet, after which the swelling generally subsides, and is gone in a day or two; but should it obstinately continue, as will sometimes happen, a stick of lunar caustic must be gently rubbed over the part every day until a cure is completed. This is far better than the red-hot iron, which was formerly so constantly used. If the lampas is owing to the cutting of a grinder, relief will be afforded by a cross-cut across the protruding gum.

BARDS, PAPS, ETC.

The swelling at the mouth of the ducts may generally be relieved by a dose of physic and green food, but should it continue, a piece of lunar caustic may be held, for a moment, against the opening of the duct

every second day, and after two or three applications the thickening will suddenly disappear.

Gastritis (acute inflammation of the stomach) is extremely rare in the horse; but it sometimes occurs from eating vegetable poisons as food, or from the wilful introduction of arsenic into this organ, or, lastly, from licking off corrosive external applications, which have been used for mange. The *symptoms* from poisoning will a good deal depend upon the article which has been taken, but in almost all cases in which vegetable poisons have been swallowed, there is a strange sort of drowsiness, so that the horse does not lie down and go to sleep, but props himself against a wall or tree with his head hanging almost to the ground. As the drowsiness increases he often falls down in his attempt to rest himself more completely, and when on the ground his breathing is loud and hard, and his sleep is so unnaturally sound that he can scarcely be roused from it. At length convulsions occur, and death soon takes place. The **treatment**, in each case, should be by rousing the horse mechanically, and at the same time giving him six or eight drachms of aromatic spirit of ammonia, in a pint or two of good ale, with a little ginger in it. This may be repeated every two hours, and the horse should be perpetually walked about until the narcotic symptoms are completely gone off, when a sound sleep will restore him to his natural state.

Corrosive sublimate is sometimes employed as a wash in mange, or to destroy lice, when it may be licked off. The **treatment** consists in a similar use of thin starch or gruel; or, if the poison has recently been given wilfully, of large quantities of white of egg.

Every domestic animal suffers in health if he is constantly fed on the same articles, and man himself perhaps more than they do. We cannot, therefore, wonder that the master is often told that some one or other of his horses is a "a little off his feed;" nor should we be surprised that the constant repetition of the panacea for this, "a dose of physic," should at length permanently establish the condition which at first it would always alleviate. It is a source of wonder that the appetite continues so good as it does, in the majority of horses, which are kept in the stable on the same kind of food, always from July to May, and often through the other months also. The use of lucerne, or clover, in the spring, is supposed to be quite sufficient to restore tone to the stomach, and undoubtedly they are better than no change at all; but at other seasons of the year something may be done towards the prevention of dyspepsia, by varying the quality of the hay, and by the use of a few carrots once or twice a week. In many stables one rick of hay is made to serve the whole, or a great part of the year, which is a very bad plan, as a change in this important article of food is much required as a change of pasture when the animal is at grass. When attention is paid to this circumstance, the appetite will seldom fail in horses of good constitution, if they are regularly worked; but without it, resort must occasionally be made to a dose of physic. It is from a neglect of this precaution that so many horses take to eat their litter, in preference to their hay; for if the same animal was placed in a straw-yard, without hay, for a month, and then allowed access to both, there would be little doubt that he would prefer the latter.

Some horses are naturally so voracious, that they are always obliged to be supplied with less than they desire, and they seldom suffer from loss of appetite; but delicate feeders require the greatest care in their management. When the stomach suffers in this way, it is always desirable to try what a complete change of food will do before resorting to medicine; and, if it can be obtained, green food of some kind should be chosen, or if not, carrots, or even steamed potatoes. In place of hay, sound wheat or barley straw may be cut into chaff, and mixed with the carrots and corn; and to this a little malt-dust may be added, once or twice a week, so as to alter the flavor. By continually changing the food in this way, the most dyspeptic stomach may often be restored to its proper tone, without doing harm with one hand while the other is doing good, as is too often the case with medicine.

BOTS.

In enumerating the so-called diseases of the horse, it would hardly be fair to other writers to omit so fruitful a subject of useless discussion as the "bots," but after all, what we can say will have its greatest value as a warning, and preventative of aimless and injurious quackery, for the bots, properly considered, do not constitute a "disease." Let us give the subject a common sense and half-way scientific examination.

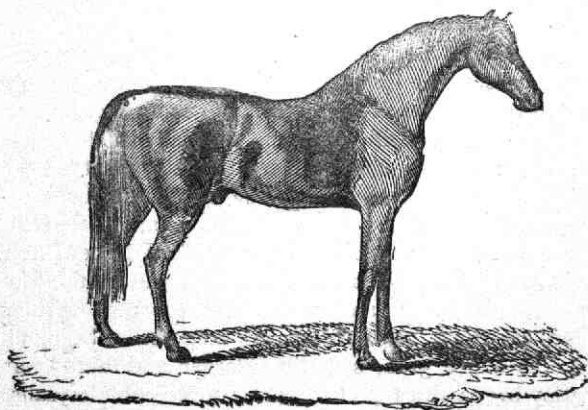
What are called "**bots**" are the larvæ, or grub, of a species of gadfly which seems to come into being wherever the horse is introduced, if it did not exist there before. This fly is known to science as the *æstrus equi*,

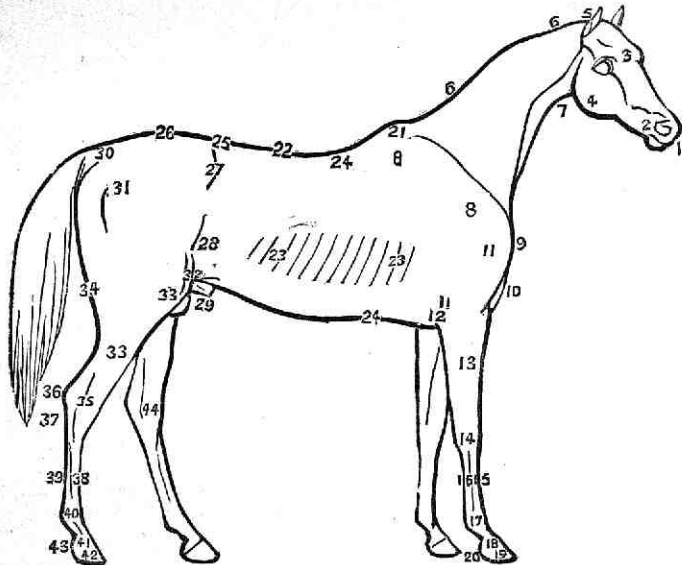
and the grubs are provided with a pair of hooks or nippers, by which they adhere to the inner membrane of the cardiac extremity of the horse's stomach, sometimes gathering in considerable masses, until such times as, in the regular course of nature, they let go their hold, and are expelled through the intestines. They may be seen at times clinging to the edges of the **anus**, and the first impression of ignorance naturally is that the horse is doomed, and "going to the worms" before his time, but such is not by any means the case. Their history is this:

This kind of gadfly begins to fly in the latter half of the summer, and the natural instinct of the female is to deposit her eggs upon the hair of the nearest horse. If she cannot find one turned out to grass, she will hunt for him in the stable, and no sort of defensive measures are of any avail except the removal of the hide of the horse. That done, and the danger is over in that particular case. The fly selects those parts of the horse's coat in readiest reach of his tongue, and so glues her eggs on that they will not come off easily till softened by the saliva of the horse. Here they stay till the heat aided by the tongue, causes the eggs to hatch, and then they are licked off and swallowed, being about the size of a small "pin worm." Being swallowed, they hitch themselves to the walls of their new home in the way we have described, and remain till the next spring. They are now, and for some time have been, as large as a bee grub, sometimes larger, and fulfill their destiny by passing out to become first each a crysalis, and then a fly on its own account. The ordinary grooming of a well-established horse cleans the eggs

off in time, especially as he is not likely to have many, but few horses in America get enough of stable care to keep them free.

The proper treatment is to let them alone until nature takes care of them, for they do not seem to do any great harm, and those medicines which will really kill the bots are equally dangerous to the horse. They are only a grub-bear.





THE POINTS OF THE HORSE.

HEAD.

1. Muzzle.
2. Nostril.
3. Forehead.
4. Jaw.
5. Poll.

NECK.

6. 6. Crest.
7. Thropple or windpipe.

FORE-QUARTER.

8. 8. Shoulder blade.
9. Point of the shoulder.
10. Bosom or breast.
11. 11. True-arm.
12. Elbow.
13. Forearm (arm).
14. Knee.
15. Cannon-bone.
16. Back sinew.
17. Fetlock or pastern-joint.
18. Coronet.
19. Hoof or foot.
20. Heel.

BODY OR MIDDLEPIECE.

21. Withers.
22. Back.

23. 23. Ribs (forming together the barrel or chest).
24. 24. The circumference of the chest at this point, called the girth.
25. The loins.
26. The croup.
27. The hip.
28. The flank.
29. The sheath.
30. The root of the dock or tail.

THE HIND - QUARTER.

31. The hip-joint, round, or whirl-bone.
32. The stifle-joint.
33. 33. Lower thigh or gaskin.
34. The quarters.
35. The hock.
36. The point of the hock.
37. The curb place.
38. The cannon-bone.
39. The back sinew.
40. Pastern or fetlock-joint.
41. Coronet.
42. Foot or hoof.
43. Heel.
44. Spavin-place.

CHAPTER NINETEENTH.

DISEASES OF HORSES.

INFLAMMATION OF THE BOWELS—COLIC—DIARRHŒA AND
DYSENTERY—STRANGULATION AND HERNIA—WORMS—
LIVER DISEASE—KIDNEYS—DIABETES—BLADDER, ETC.

VETERINARY surgeons describe various classes of inflammation of the bowels, but we may dismiss the entire mass of useless learning with this note, that the distinction can only be drawn with any certainty on cutting up the animal in case the attack kills him. The same kind of treatment is good for all, the main care being to be sure that you do not mistake your disease for colic, or *vice versa*.

The symptoms of **Inflammation of the Bowels** vary in severity and in the rapidity of their development, but they come on generally in about the following order; at first there is simple loss of appetite, dulness of eyes, and a general uneasiness, which are soon followed by a slight rigor or shivering. The pulse becomes rapid, but small and wiry, and the horse becomes very restless, pawing his litter, and looking back at his sides in a wistful and anxious manner. In the next stage all these signs are aggravated; the hind-legs are used to strike at but not touch the belly; and the horse lies down, rolls on his back and struggles violently. The pulse becomes quicker and harder, but is still

small. The belly is acutely tender and hard to the touch, the bowels are costive, and the horse is constantly turning round, moaning, and regarding his flanks with the most anxious expression of countenance. Then comes the final and fatal stage, which is thus described by an English writer: "The next stage borders on delirium. The eye acquires a wild, haggard, and 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 tranquillized—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 dead-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 most exquisite suffering. He again becomes convulsed, and in a few more struggles, less violent than the former, he expires." The whole duration of the attack being from twelve to forty-eight hours in acute cases, and extending to three or four days in those which are denominated sub-acute.

Dr. Walsch says, in the **treatment** of this disease, as in all those implicating serous membrane, blood must be taken largely, and in a full stream, the quantity

usually required to make a suitable impression being from six to nine quarts. The belly should be fomented with very hot water, by two men holding against it a doubled blanket, dipped in that fluid, which should be constantly changed, to keep up the temperature. The bowels should be backraked, and the following drench should be given every six hours till it operates, which should be hastened by injections of warm water :

Take of Linseed Oil	...	...	...	1 pint.
Laudanum	...	...	...	2 oz.

If the first bleeding does not give relief in six or eight hours, it must be repeated to the extent of three or four quarts, and at the same time some liquid blister may be rubbed into the skin of the abdomen, continuing the fomentations, at short intervals, under that part which will hasten its operations. The *diet* should be confined to thin gruel or bran-mashes, and no hay should be allowed until the severity of the attack has abated.

To distinguish this disease from colic is of the highest importance, and for this purpose it will be necessary to describe the symptoms of the latter disease, so as to compare the two together.

In **Colic** there is spasm of the muscular coat of the intestines. Various names have been given to its different forms, such as the fret, the gripes, spasmodic colic, flatulent colic, etc., but they all display the above feature, and are only modifications of it, depending upon the cause which has produced it. In spasmodic colic, the bowels are not unnaturally distended, but in flatulent

colic their distension by gas brings on the spasm, the muscular fibres being stretched to so great an extent as to cause them to contract irregularly and with a morbid action. Sometimes, when the bowels are very costive, irritation is established as an effort of nature to procure the dislodgement of the hardened faecal matters, and thus a third cause of the disease is discovered. The exact nature and cause are always to be ascertained from the history of the case, and its symptoms, and as the treatment will especially be conducted with a view to a removal of the cause, they are of the highest importance. The **symptoms** in all cases of colic, by which it may be distinguished from the last described disease, are as follows: In both acute pain is manifested by stamping, looking at the flanks, and rolling; but in inflammation of the bowels the pain is constant, while in colic there are intervals of rest, when the horse seems quite easy, and often begins to feed. In both the poor animal strikes at his belly; but in the former he takes great care not to touch the skin, while in the latter (colic) he will often bring the blood by his desperate efforts to get rid of his annoyance. In inflammation of the bowels the belly is hot and exquisitely tender to the touch, but in colic it is not unnaturally warm, and gradual pressure with a broad surface, such as the whole hand, always is readily borne, and generally affords relief. The pulse also is little affected in colic; and, lastly, the attack is very much more sudden than in inflammation.

Such are the general signs by which a case of colic may be distinguished from inflammation of the bowels, but beyond this it is necessary to in-

investigate whether it is pure spasmodic colic, or produced by flatulence, or by an obstruction in the bowels.

In **Spasmodic Colic** all the above symptoms are displayed without any great distension of the abdomen; and if the history of the case is gone into, it will be found that after coming in heated the horse has been allowed to drink cold water, or has been exposed in an exhausted state to a draught of air.

In **Flatulent Colic** the abdomen is enormously distended; the attack is not so sudden, and the pain is not so intense, being rather to be considered in the average of cases, as a high degree of uneasiness, occasionally amounting to a sharp pang, than giving the idea of agony. In aggravated attacks, the distension is so enormous as to leave no doubt of the nature of the exciting cause. Here also the spasms are often brought on by drinking cold water while the horse is in a heated and exhausted state.

Where there is a **Stoppage in the Bowels** to cause the spasm, on questioning the groom, it will be found that the dung for some days has been hard and in small lumps, with occasional patches of mucous upon it. In other respects there is little to distinguish this variety from the last.

The **treatment** must in all cases be conducted on a totally different plan to that necessary when inflammation is present. Bleeding will be of no avail, at all events in the early stages, and before the disease has gone on, as it sometimes will, into an inflammatory condition. On the other hand, stimulating drugs, which would be fatal in inflammation of the bowels will here

generally succeed in causing a return of healthy muscular action. The disease is indeed similar in its essential features to cramp in the muscles of the human leg or arm, the only difference being that it does not as speedily disappear, because it is impossible to get at the muscular coat of the intestines, and apply the stimulus of friction.

As soon as a case is clearly made out to be of a **spasmodic nature**, one or other of the following drenches should be given, the choice being made in proportion to the intensity of the symptoms :

1. Sulphuric Ether 1 OZ.
 Laudanum 2 „
 Compound Decoction of Aloes .. 5 „
 Mix, and give every half hour until relief is afforded.
2. Spirit of Turpentine... .. 4 OZ.
 Linseed Oil 12 „
 Laudanum 1½ „
 Mix, and give every hour till the pain ceases.
3. Aromatic Spirit of Ammonia ... 1½ oz.
 Laudanum 2 „
 Tincture of Ginger 1½ „
 Hot Ale 1 quart.
 Mix, and give every hour.

Hot water should also be applied to the abdomen, and if an injection syringe is at hand, large quantities of water, at a temperature of 100 degrees Fahrenheit,

should be injected *per anum*, until in fact the bowel will hold no more without a dangerous amount of force.

In **Flatulent Colic** the same remedies may be employed, but the turpentine mixture is here especially beneficial. The use of warm water injections will often bring away large volumes of wind, which at once affords relief, and the attack is cured.

The administration of aperient medicines by the mouth of the horse is only likely to increase the difficulty. Nothing but injections can be safely employed to relieve costive symptoms. An injection in a bad case, of a gallon of gruel, containing a quart of castor oil, and half a pint of spirit of turpentine, may be useful, and half an ounce of laudanum may be given, in water at the mouth, to relieve the spasms.

When the urgent symptoms of colic in any of its forms are relieved, great care must be exercised that a relapse does not take place from the use of improper food. The water should be carefully chilled, and a warm bran-mash should be given, containing in it half a feed of bruised oats. Nothing but these at moderate intervals, in the shape of food or drink, should be allowed for a day or two, and then the horse may gradually return to his customary treatment, avoiding of course, everything which may appear to have contributed to the development of colic.

It will not be easy, in most cases, especially in their beginning, to distinguish between diarrhoea and dysentery, nor is it of any special importance. The difference in treatment is based more on the *cause* of the difficulty than anything else.

When too much physic has been foolishly given, the organs of the horse are not unapt to obstinately refuse to reassume their natural operation.

When the action of the bowels has gone on for three or four days consecutively, and there is no disposition to "set," the eyes become staring and glassy, the pulse is feeble, and the heart flutters in the most distressing manner; the mouth has a peculiarly offensive smell, the tongue being pale and covered with a white fur having a brown centre. The abdomen is generally tucked tightly up, but in the latter stages large volumes of gas are evolved, and it becomes tumid.

The **treatment** should consist in a feed of rice, boiled till quite soft, and if not taken voluntarily, it should be given as a drench, mixed into a thin liquid form with warm water. If the case is severe, one or two ounces of laudanum may be added to a quart of rice or milk, and given every time the bowels act with violence. Or a thin gruel may be made with wheat flour, and the laudanum be mixed with that instead of the rice. A perseverance in these remedies will almost invariably produce the desired effect, if they have not been deferred until the horse is very much exhausted, when a pint of wine may be substituted for the laudanum with advantage.

In **Diarrhoea** resulting from cold or over-exertion, the treatment should be exactly like that prescribed above, but it will sometimes be necessary to give chalk in addition to the remedies there alluded to. The rice or flour milk may be administered as food, and the follow-

ing drench given by itself every time there is a discharge of liquid dung :

Take of Powdered Opium...	...	1 drachm.
Tincture of Catechu	...	$\frac{1}{4}$ oz.
Chalk Mixture	... ..	1 pint.

Mix, and give as a drench.

During the action of these remedies the body must be kept warm by proper clothing, and the legs should be encased in flannel bandages, previously made hot at the fire, and renewed as they become cold.

In **Dysentery** (or molten grease) it is often necessary to take a little blood away, if there is evidence of great inflammation in the amount of mucous surrounding the dung, and when aperient medicine does not at once put a stop to the cause of the irritation by bringing the lumps away. Back-raking, and injections of two ounces of laudanum and a pint of castor oil with gruel, should be adopted in the first instance, but they will seldom be fully efficient without the aid of linseed oil given by the mouth. A pint of this, with half a pint of *good* castor oil, will generally produce a copious discharge of lumps, and then the irritation ceases without requiring any further interference.

Whenever there is diarrhoea or dysentery present to any extent, rice-water should be the sole drink.

The horse, like the human owner, is very apt at times to be troubled by **worms**, and these are not to be confounded with "bots." They are of two classes, of which the larger and more injurious are like ordinary "angleworms," except in their color, which is of a pink-

ish white. These latter have their peculiar field of operations in the smaller intestines, and the symptoms of their presence are not as clearly defined as it could be wished. A rough, staring, hollow coat, a craving appetite without any seeming benefit from the food—for the animal grows thin on it all the while—and the passage of mucous with the dung, these are some of the ordinary indications of the presence of worms. Sometimes a small portion of the mucous will adhere to the anus, in its passage out, producing an itching sensation, which the animal tries to allay by rubbing with the tail, but such irritation may also arise from other causes. When these several symptoms are combined, it may with some degree of certainty be supposed that there are worms in the intestines, but before proceeding to dislodge them, it is always the wisest plan to obtain proof positive of their existence, by giving an ordinary dose of physic when on watching the evacuations, one or more worms may generally be discovered if they are present. When the case is clearly made out the plan of *treatment* is as follows:

Take of Tartar Emetic 1 drachm

Powdered Ginger ¼ „

**Linseed Meal sufficient to make into a ball
with boiling water.**

One should be given every morning for a week, then a dose of physic; linseed oil being the most proper. Let the stomach rest a week; give another course of balls and dose of physic, after which let the horse have a drachm of sulphate of iron (powdered) twice a day with his feed of corn.

There is no medicine which is so effectual for removing worms in the horse as tartar emetic, and none which is so entirely innocuous to the stomach. Calomel and spirit of turpentine were formerly in use as vermifuges, but they are both dangerous drugs; the former, if given for any length of time, causing great derangement of the stomach and liver; and the latter often producing considerable inflammation after a single dose, if sufficiently large to cause the expulsion of the worms. Linseed oil given in half-pint doses every morning is also an excellent vermifuge, but not equal to the tartar emetic. If this quantity does not relax the bowels, it may be increased until they are rendered slightly more loose than usual, but avoiding anything like purgation.

The *smaller species* of intestinal worm chiefly inhabits the rectum. It produces great irritation and uneasiness, but has not the same prejudiced effect on the health as the larger parasite. It is about one to two inches in length, and somewhat smaller in diameter than a crow quill. The term *thread worm* is correctly applied to them, as they are not unlike sections of stout thread or cotton. The only **symptom** by which their presence can be made out is the rubbing of the tail, when if on examination no vermin or eruption is found in the dock, it may be presumed that worms exist in the rectum. The remedy for these worms is by the injection every morning for a week of a pint of linseed oil, containing two drachms of spirit of turpentine. This will either kill or bring away the worms, with the exception of a few which are driven by it higher up, but by waiting a week or ten days (during which time they will

have re-entered the rectum) and then repeating the process, that may generally be entirely expelled. The sulphate of iron must be given here, as before described.

Dr. Walsch says :

“The **Liver of the horse** is less liable to disease than that of any other domestic animal, and the symptoms of its occurrence are so obscure that it is seldom until a post-mortem examination that a discovery is made of its existence. This unerring guide, however, informs us that the liver is sometimes unnaturally enlarged and hard, at others softened, and in others again the subject of cancerous deposits. It is also attacked by inflammation, of which the *symptoms* are feverishness ; rapid pulse, not hard and generally fuller than usual ; appetite bad ; restlessness, and the patient often looking round to his right side with an anxious expression, not indicative of severe pain. Slight tenderness of the right side ; but this is not easily made out satisfactorily. Bowels generally confined, but there is sometimes diarrhoea. Very frequently the whites of the eyes show a tinge of yellow, but anything like jaundice is unknown. The **treatment** must consist in the use of calomel and opium, with mild purging, thus :

Take of Calomel	...	...	...	1 drachm.
Powdered Opium	...	...	...	1 „

Linseed Meal and boiling water enough to make into a ball, which should be given night and morning. Every other day a pint of Linseed Oil should be administered.

The *diet* should if possible be confined to green food, which will do more good than medicine: indeed, in fine weather, a run at grass during the day should be preferred to all other remedies, taking care to shelter the horse at night in an airy loose box."

The **Kidneys** are particularly prone to disease, and are subject to inflammation; to diabetes, or profuse staling; to hæmaturæa, or a discharge of blood, and to torpidity, or inaction.

Inflammation of the Kidneys is generally produced by an exposure of the loins to wet and cold, as in carriage-horses standing about in the rain during the winter season. Sometimes it follows violent muscular exertion, and is then said to be caused by a strain in the back, but in these cases there is probably an exposure to cold in a state of exhaustion, or by the rupture of a branch of the renal artery or vein, as the inflammation of one organ can scarcely be produced by the strain of another. The **symptoms** are a constant desire to void the urine, which is of a very dark color—often almost black. Great pain, as evidenced by the expression of countenance and by groans, as well as by frequent wistful looks at the loins. On pressing these parts there is some tenderness, but not excessive, as in rheumatism. The pulse is quick, hard, and full. The attitude of the hind quarters is peculiar, the horse standing in a straddling position with his back arched, and refusing to move without actual compulsion. It is sometimes difficult to distinguish this from inflammation of the neck of the bladder, but by attending to the state of the urine, which is dark brown or black in the former case, and nearly of a natural color in the latter,

the one may be known from the other. To make matters still more clear, the oiled hand may be passed into the rectum, when in kidney disease the bladder will be found contracted and empty (the urine being so pungent as to irritate that organ), while in inflammation or spasm of its neck, it will be distended, often to a large size. The **treatment** to be adopted must be active, as the disease runs a very rapid course, and speedily ends in death if neglected. A large quantity of blood must at once be taken. The skin must be acted on energetically, so as to draw the blood to its surface, and if a Turkish bath is at hand, it will be highly beneficial. If not, the application of hot water, as recommended on page 229 may be tried, and in many cases it has acted like a charm. Failing the means for carrying out either of these remedies, the loins should be rubbed with an embrocation consisting of olive oil, liquid ammonia and laudanum in equal parts, but cantharides and turpentine must be carefully avoided, as likely to be absorbed, when they would add fuel to the fire. A fresh sheepskin should be warmed with hot (not boiling) water, and applied over the back, and the liniment should be rubbed in profusely every hour, restoring the skin to its place immediately afterwards. Mustard is sometimes used instead of ammonia, and as it is always at hand, it may form a good substitute, but it is not nearly so powerful an irritant to the skin as the latter, especially when evaporation is prevented by the sheepskin, or by a piece of any waterproof article. A mild aperient may be given, linseed oil being the best form, but if the bowels continue obstinate, and it is necessary to repeat it, eight or ten drops of croton oil may be

added to a pint of the oil, great care being taken to assist its action by raking and injection, the latter being also useful as a fomentation to the kidneys. The **diet** should consist of scalded linseed and bran-mashes no water being allowed without containing sufficient linseed tea to make it slightly glutinous, but not so much so as to nauseate the patient. If the symptoms are not greatly abated in six or eight hours, the bleeding must be repeated, for upon this remedy the chief dependence must be placed. A mild and soothing drench, composed of half an ounce of carbonate of soda, dissolved in six ounces of linseed tea, may be given every six hours, but it is of no certain effect. Unless the inflammation subsides the horse will die in a few hours.

Diabetes of late years has been much more frequent than was formerly the case, probably owing to the enormous quantities of corn which are allowed in the present day. But whatever may be the cause, the *symptoms* are clear enough, the horse constantly staling and passing large quantities of urine each time. The **treatment** should be conducted on the principle that the cause should if possible be ascertained and removed. Mowburnt hay will often bring on diabetes, and new oats have a similar tendency in delicate horses. In any case it is wise to make a total change in the food as far as it can possibly be done. Green food will often check it at once, and a bran-mash containing a few carrots has a similiar chance of doing good. With these alterations in the *quality* of the food attention should also be paid to the *quantity* of the grain, which should be reduced if more than a peck a day has been

given. Half a drachm of the sulphate of iron (powdered) should be mixed with each feed (that is four times a day), and the horse should be well clothed and his legs warmly bandaged in a cool and airy stall or box. By attention to these directions the attack may generally be subdued in a few days, but there is always a great tendency to its return. Should it persist in spite of the adoption of the measures already recommended, the following ball may be tried :

Take of Gallic Acid	...	...	$\frac{1}{2}$ drachm.
Opium	...	...	I „

Treacle and Linseed Meal enough to make into a ball, which should be given twice.

Haematuræa, like diabetes, is easily recognized by the presence of blood in greater or less quantities passed with the urine. It is not, however, of the bright red color natural to pure blood, but it is more or less dingy, and sometimes of a smoky-brown color, as occurs in inflammation. Bloody urine, however, may often be passed without any sign of that condition, and therefore unaccompanied by pain, or any other urgent symptom. The causes are exceedingly various. The **symptoms** are the existence of bloody urine unaccompanied by pain or irritation, marking the absence of inflammation of the kidneys. As to **treatment** little can be done in severe cases, and mild ones only require rest, a dose of physic, and perhaps the abstraction of three or four quarts of blood. Green food should be given, and the diet should be attended to as for diabetes. If the urine is scanty, yet evidently there is no inflammation, two or three drachms of nitre may be given

with the mash at night, but this remedy should be employed with great caution.

Inaction of the Kidneys is common. Very often the kidneys are only inactive because the horse has not been regularly watered, and where an unlimited supply is allowed this condition is comparatively rare. There is no harm in resorting to nitre occasionally, but if it is often found necessary to employ this drug, the health is sure to suffer, and an alteration in the diet should be tried in preference. At all events, if it is given, the horse should be allowed to drink as much and as often as he likes.

The **bladder** is subject to inflammation of its coats or neck—to spasm—and to the formation of calculi.

Inflammation of the Bladder is not very common excepting when it is produced by irritants of a mechanical or chemical nature. Thus when the kidneys secrete a highly irritating urine, the bladder suffers in its passage, and we have the two organs inflamed at the same time. Again, when cantharides have been given, the bladder is liable to become inflamed. The **symptoms** are—a quick pulse—pain in the hind-quarter, evinced by the looks of the animal in that direction—and constant straining to pass the urine, which is thick and mixed with mucous, or in aggravated cases, with purulent matter. The **treatment** to be adopted, if the case is severe, will consist in bleeding, back-raking, and purgation with linseed or castor oil, avoiding aloes, which have a tendency to irritate the bladder. Linseed tea should be given as the sole drink, and scalded linseed mixed with a bran-mash, as food.

The following ball may also be given, and repeated if necessary :

Take of Powdered Opium	...	1 drachm.
Tartar Emetic	...	1½ drachms.

To be made up into a ball with linseed meal and boiling water, and given every six hours.

Retention of Urine may be due either to inflammation of the neck of the bladder, occasioning a spasmodic closure of that part, or there may be spasms unattended by inflammation, and solely due to the irritation of some offending substance, such as a calculus, or a small dose of cantharides. The **treatment**, in either case, must be directed to the spasmodic constriction, which is generally under the control of large doses of opium and camphor, that is, from one drachm to two drachms of each, repeated every five or six hours. If the symptoms are urgent, bleeding may also be resorted to, and when the bladder is felt to be greatly distended, no time should be lost in evacuating it by means of the catheter, which operation, however, should only be entrusted to a regular practitioner accustomed to its use.

Balanitis, or inflammation of the penis, is very common in the horse, being brought on by the decomposition of the natural secretions, when they have been allowed to collect for any length of time. At first there is merely a slight discharge of pus, but in process of time foul sores break out, and very often fungus growths spring from them, which block up the passage through the opening of the sheath, and cause considerable

swelling and inconvenience. These are quite distinct from warts, which occur in this part just as they do in other situations. The **treatment** requires some skill and experience, because mild remedies are of no use, and severe ones are not unattended with danger. The parts first of all must be well cleansed by syringing, or if the end of the penis can be laid hold of, by washing with a sponge. The following wash may then be applied, and it should be repeated every day:

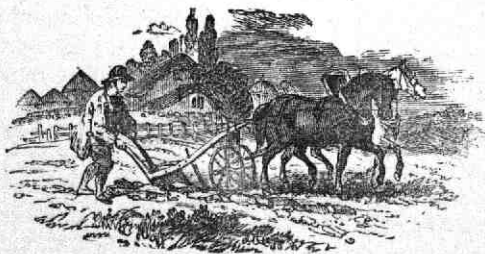
If the morbid growths are very extensive, nothing but amputation of the penis, or the use of corrosive sublimate will remove them. Severe bleeding sometimes follows both of these measures, but it seldom goes on to a dangerous extent. Still it is scarcely advisable for any one but a professional man to undertake the operation.

In the mare the vagina is sometimes inflamed, attended with a copious yellow discharge. An injection of the wash mentioned in the last paragraph will generally soon set the matter right. At first it should be used only of half the strength, gradually increasing it, until the full quantity of chloride of zinc is employed.

Inversion of the Uterus sometimes follow parturition, but it is very rare in the mare. The uterus should be at once replaced, using as little force as possible, and taking care before the hand is withdrawn, that it really is turned back again from its inverted position.

Nymphomania occurs sometimes in mares at the time of being "in use," and goes on to such an extent as to render them absolutely regardless of pain, for the

time being, though not to make them lose their consciousness. They will kick and squeal till they become white with heat, and no restraint will prevent them from trying to continue their violent attempts to destroy everything behind them. These symptoms are especially developed in the presence of other animals of the same species, whether mares or geldings; but the near proximity of an entire horse will be still worse. If placed in a loose box, without any restraint whatever, they generally become more calm, and when the state is developed, such a plan should always be adopted. It is chiefly among highly-fed and lightly worked mares that the disease is manifested; and a dose of physic, with starvation in a loose box, away from any other horse, will very soon put an end to it in almost every instance.



CHAPTER TWENTIETH.

MISCELLANEOUS DISEASES.

CONVULSIONS — MAD STAGGERS — MADNESS — MEGRIMS —
STRING-HALT—SUNSTROKE—STOMACH STAGGERS—LOCK-
JAW—APOPLEXY.

CONVULSIONS, properly so-called, are almost entirely confined to young colts, and constitute a "pasture disease" or summer complaint. Very little is known about them, or can be done for them. They are variously attributed to heat and worms. The attacks are generally brief, the sufferer falling to the ground without much warning, and kicking violently, and then in a few minutes getting up, apparently as well as ever. A mild dose of linseed oil may prevent a second attack, or it may not, but it will do no harm to try the experiment.

Good veterinarians differ both as to the causes and nature of the rare but fatal disease known as **mad staggers**, and some have had much to say of its treatment. As to this latter, inasmuch as we have never known a case in which treatment was of any use, we will only say that humanity calls for a bullet through the animal's head, as soon as the true nature of the disease is definitely ascertained, and devote our attention to such a description of the symptoms as to prevent any error.

Youatt describes the **mad staggers** as a species of **Brain Fever**, and that, no doubt, is sufficiently accurate. The first symptoms are not such as to give any indication, to an inexperienced eye, of what is coming. The eyes will be heavy, and the horse will reject his food, but that is about all. After a day or two, sometimes three, the fever suddenly shows itself more acutely, and delirium comes on. The flanks will heave, the nostrils distend, and the unfortunate brute will dash himself furiously about, kicking, biting, and plunging. He seems to be bent on mischief, but is more likely blindly unconscious of all but his sufferings. He will dash himself to pieces, sometimes, if not checked. He must by all means be kept penned up, or he will be sure to do harm. Severe bleeding will make him quiet from exhaustion, but except it may be in very mild cases, it will do no permanent good. He may even pass out of his first fit into a state of stupor, for the disease is a varying and treacherous one.

No one with any coolness or judgment need mistake the pain and distress of colic for the disease, though it has been done in some cases. In genuine *madness*, though the results and treatment are about the same, the symptoms differ. Both being incurable, we may classify and describe them together. Madness is never primarily developed in the constitution of any horse, but must always come, in some manner, from an animal of the dog or cat kind. If a mad dog has been in the neighborhood, that fact will assist in understanding the symptoms, but if these latter are sufficiently marked, no time need be wasted in hunting for the dog, as the effects of the virus require from three to eight weeks be-

fore they show themselves. At once on the appearance of any signs of madness, such measures should be taken as will absolutely prevent the animal from doing mischief, in any event, to any other living thing. In case of a mistake in the disease no harm will be done, and if there is no error the horse can be killed before he has communicated the fearful malady, or inflicted other damage in his paroxysms. Dr. Walsch and others erroneously declare that horses taken with madness always show the same fear of water, and the like, that causes the disease to be termed *hydrophobia* in other animals, and thus might lead to dangerous mistakes. On the contrary, even when there is dread of liquids, the thirst produced is sometimes excessive, although swallowing is performed with painful and difficult gulps. The attack is apt to come with very little if any warning. The horse may go to his work as usual, and suddenly stop in his traces, tremble, heave, paw, stagger, and fall; then he will rise again as if to go on, look wildly about him, give a frantic pull or two, and then again go down. No time is to be lost. If the case is otherwise a clear one, destroy him at once. If there is any reasonable doubt, get him confined as quickly as possible in the nearest secure place, or you do not know for what evil you may be responsible. The general symptoms have been better described by Youatt than by anybody else, for fortunately madness is not common. He says that it begins with "spasmodic movement of the upper lip, particularly of the angles of the lip. Closely following on this, or contemporaneous with it, are the depressed and anxious countenance and inquiring gaze, suddenly, however, lighted up and be-

coming fierce and menacing from some unknown cause, or at the approach of a stranger. From time to time different parts of the frame, the eyes, the jaws, particular limbs will be convulsed. The eye will occasionally wander after some imaginary object, and the horse will snap again and again at that which has no real existence. Then will come the irrepressible desire to bite the attendants, or the animal within its reach. To this will succeed the demolition of the rack, the manger, and the whole furniture of the stable, accompanied by the peculiar dread of water which has already been described. Towards the close of the disease there is generally paralysis, usually confined to the loins and hinder extremities, or involving those organs which derive their nervous action from this portion of the spinal cord: hence the distressing tenesmus which is occasionally seen.

The main difference to be noted between genuine madness (rabies), and bad cases of mad staggers is, that in the latter, the victim seems to lose all fear of man, if not all consciousness of his presence, while the mad horse, however savage and destructive, will know his master, and exhibit other signs of "horse sense," even amid his sufferings.

The best veterinary authorities lead us to believe that the external symptoms known as **megrims** may be indications of varied forms of disease of the brain or heart of the horse, but whose precise nature can only be ascertained by that last resort of scientific curiosity, a *post-mortem* examination. All the purposes of this book will therefore, be answered by briefly indicating the disease and its treatment.

The horse is perhaps trotting along, when all at once he begins shaking his head as if the bridle chafed his ears, which are drawn back close to the poll. The driver gets down to examine these facts, and observes the eyelids quivering, and the nostrils affected with a trembling kind of spasm. Sometimes the rest will allow of the attack going off, but most frequently, the head is drawn to one side, the legs of that half of the body seem to be paralyzed, and the horse making a segment of a circle goes down lies a few minutes on the ground, and then rises as if nothing had happened beyond a slight sweating and disturbance of the respiration. **Treatment** can be of little avail. If the attack has happened while in harness, the collar should always be carefully inspected, and if at all tight it should be replaced by a deeper one. A diseased state of the valves of the heart ought to be discoverable by auscultation, but it requires a practised ear to do this, and the directions for ascertaining its presence are beyond the scope of this book. The only plan which can be safely adopted, is to take the subject of megrims quietly home to his stable, and carefully examine into the condition of all his functions, with a view to improve the action of any organ which appears to be out of order, whatever it may be. If all seems to be going on well—if the appetite is good, and the heart acts with regularity and with due force, while the brain seems clear, and the eye is not either dull or suffused with blood—nothing should be attempted, but the horse being subject to a second attack, as proved by experience, should be put to work in which no great danger can be apprehended from them.

Tetanus, or Lockjaw, is not a very common thing, and may generally be recognized by the rigidity of the lower jaw and the muscles of the neck. The head is stretched out and turned to one side, the nostrils are dilated, the eyes drawn back, the ears stiff and erect. Gradually, the whole body, to the very tail, becomes affected in a similar manner. The horse evidently suffers great pain. The disease is a treacherous one, but something may be done by prompt and severe treatment. If the "dilute Prussic acid" of the U. S. Pharmacopœia is obtainable, which it seldom is, give thirty drops night and morning, and keep the animal in a quiet place. This must be given at once to be of any service. Chloroform, however, can almost always be got at, and this must be carefully administered, through a flannel cloth, guarded by a piece of "sieve wire" to keep the chloroform from dripping on the lips and mouth. A little ingenuity and skill will force the horse to breathe through the wire, and inhale the chloroform. Keep it up until the horse does not feel the prick of a pin, and the spasm will probably be relieved temporarily, so that other medicines can act. Then blister the whole length of the spine with tincture of cantharides, and give a pint of castor oil and six or eight drops of croton oil. If this cannot be got down him, try two drachms of calomel, and as much of tartar emetic. Use all means to get them into the mouth, and to force him to swallow them. If you can get the bowels to operate copiously, give two drachms of solid opium, or what is better, repeat the chloroform in about six hours, keeping the horse under its influence for an hour or two, according to the severity of the case, and withdrawing it slowly.

Do not attempt any quack remedies for the proposed cure of **Stringhalt**, as nothing can be done for it.

Sunstroke is a very common disease, in our large cities especially, and is best prevented by regular and frequent watering, care not to over-feed or over-work, and a small pad or shade fastened on the headstall so as to not touch the head. The latter is not needed unless the horse is to be much exposed.

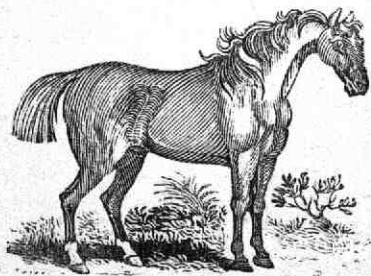
In case of an attack, take the animal into the shade. If you can get ice, pound it small, wrap it in a cloth and pack it on his forehead and between his ears. Give him two ounces of sulphuric ether and 20 drops of tincture of aconite and a quart of ale or porter. Do not use him again until he is entirely recovered, and remember that he is doubly likely to be attacked again.

The first symptoms of **Stomach Stagers** closely resemble those of mad staggers, but the effects are not always so fatal. It is the result of over-feeding, or too heavy a feed after too long a fast, and this fact is a sufficient suggestion of the best mode of prevention. The symptoms are; the horse stands dull, sleepy, staggering; when roused, he looks vacantly around him; perhaps seizes a lock of hay, and dozes again with it in his mouth; at length he drops and dies; or the sleepiness passes off, and delirium comes on, when he falls, rises again, drops, beats himself about, and dies in convulsions.

“Bleed very largely;—that cannot do harm, and in mad staggers is indispensable. Give a good dose of physic—*that* also cannot do harm, although in stomach stagger it cannot do much good, for it can scarcely find its way into the over-distended stomach, and it certain-

ly cannot find its way through it. Keeping the horse from all food will be a very proper proceeding, whichever be the disease." So says Youatt, and we may add that if you can get and use a stomach pump, and relieve the poor beast of that which is poisoning him, you may do better still.

In a case of **apoplexy** it will not be often that you will know what is the matter until it is too late. Bleeding *copiously*, severe purgation, and blisters to the head and neck, are the only treatment and will probably fail. A marked symptom is great sleepiness, accompanied by snoring and a heavy stupidity in the swing of the head.



CHAPTER TWENTY-FIRST

MISCELLANEOUS DISEASES.

DISEASES OF THE EAR—DISEASES OF THE EYE—CATARACT
 —BUCKEYE—SIMPLE INFLAMMATION—EPIDEMIC OPH-
 THALMIA—SPECIFIC OPTHALMIA—SURFEIT—MANGE—
 MALLENDERS — SCRATCHES — FOUNDERS — NAVICULAR
 DISEASE—OVER-REACH.

THERE is but one disease of the horse's ear to which we need allude. When deafness is occasioned by the formation of an abscess, from any cause, wait for the proper time open, the abscess so that the matter will flow out as fast as it forms, and leave the case to nature.

The **eye** of the horse is very liable to various diseases, and for some of them treatment is very effective. Nothing can be done for **cataract** or **buckeye**, and humanity forbids that anything should be attempted. They are local in their nature and do not depend upon or affect the general health of the horse.

Simple Inflammation may be a disease by itself, or a symptom of something worse, but should receive prompt attention. It is easily recognized by the half-shut eye, afraid of the light; the gummy, sticky lids; the formation of "tears;" the redness inside the lids, and the swollen, bloodshot look of the eye itself. It may be caused by local injury, a bad cold, or over-feeding, and if it is not checked it may destroy the eye.

In bad cases bleed from the jugular vein very freely; give a good dose of physic; bathe the eye frequently in warm water or weak tea; in a very severe case put a seton into the skin of the upper jaw, two inches below the eye. This latter, however is *only* for bad cases, and should not be tried in a hurry. Mild cases will do well with the physic and without bleeding. Another treatment, for ordinary cases, consists of cold water bandages, washing several times a day with cold tea, and a careful touching of the inside of the lid twice a day with a soft camel's hair brush dipped in a weak solution of nitrate of silver, 12 grains to four ounces of rain water. If the inflammation is taken in its very first stages a judicious employment of these simple remedies will generally effect a cure. Bear in mind that *over* treatment will do for your horse's eye just what it would for your own.

Epidemic ophthalmia is only too common in some parts of the country, and most horse owners know the symptoms. One of these is a free discharge of purulent fluid, and the eyelid becomes much swollen, while the eye seems covered with a puffy red membrane.

Begin, at first, as for simple inflammation, but if the disease has got into the chronic stage, double the strength of the nitrate of silver wash, and use a quill in getting it into the eye. A few drops once a day will be sufficient.

Specific ophthalmia is the worst disease to which the eye of horses are liable, is swift in its action, difficult to cure and likely to return. Even if the eye is "cured" it is generally injured in some way. It is an

inflammation of the *iris* or colored part of the eye. The symptoms are the "white" of the eye becomes of a deep red, the cornea has a muddy look, the iris loses its brightness and often shows one or two white specks, while light seems to be unendurable.

Bleeding, purging, and the seton, as before described, are the only remedies, but they must be set promptly at work, or not only will this eye be surely gone, but the other will be in danger. In any of these diseases, low feed, little corn, quiet, plenty of fresh air and freedom from dust and other irritants, must be looked out for as matters of course. If the eye has been injured by an accident, proceed with warm water fomentations and a bandage, precisely as if it were your own.

Amaurosis, or palsy of the retina, if caused by a disordered stomach, will sometimes yield to a good run at grass. Bleeding and a seton, as above, in bad cases, are not without effect, but when that is required the disease is generally incurable. The symptoms are, deficient or absent sensibility to light, and a consequent indispotion of the pupil to contract, while the latter maintains also an unnatural expansion. This should be carefully looked for in buying a horse.

Surfeit, shows itself in small scabs on the back and loins, matting the hair. It indicates simply a bad condition of the blood and deficient action of the skin in carrying off secretions, and may be caused by various errors in feeding and stable care. In treating it, adopt only such a course as it is best calculated to bring the horse into good condition, without reference to the disease, or at most give him an occasional mild dose of

nitre to act on his kidneys. The cure must be left to time, and all sharp remedies avoided.

Hidebound a dry, tight skin, that seems too small for the horse, is a symptom and consequences of other diseases, or is caused by bad food and derangement of the digestive organs. All the treatment must be directed to the other diseases, if known, and to promoting healthy and regular action of the stomach and bowels. No horse will be hidebound while these latter work well.

Mange is simply "horse itch," and is of the same cause and character with the human disease. The treatment must aim at killing the itch insect and preventing its return. The stable and everything the horse touches must be thoroughly washed with a solution of spirits of turpentine. Nothing but a washing in a solution of corrosive sublimate will safely cleanse the harness. For the horse the following recipes are commonly in use, and may be regarded as sufficient:

- | | | | |
|---------------------------|-----|-----|---------|
| 1. Take of Common Sulphur | ... | ... | 6 oz. |
| Sperm or Train Oil | ... | ... | 1 pint. |
| Spirit of Turpentine | ... | ... | 3 oz. |

Mix, and rub well into the skin with a flannel, or in preference with a painter's brush.

- | | |
|--------------------------------------|-------------|
| 2. Take of Compound Sulphur Ointment | 8 oz. |
| Train or Sperm Oil | ... 1 pint. |
| Spirit of Turpentine | ... 3 oz. |

Mix, and use as above.

Mallenders and **Sallenders** are both of the same nature, differing only in the locality where they

are displayed. The former shows itself in the flexure at the back of the knee, and the latter at the bend of the hock. The *symptoms* are shown in the appearance of a foul scurf mixed with a few thin scabs, the skin underneath being stiff and unyielding. They are generally brought on by washing the legs and leaving them undried. The *treatment* required is merely the application of the following ointment, which should be well rubbed in every night:—

Take of Cerate of Supracetate of Lead 1 oz.

Creosote 10 drops

If the skin continues to be very hard and stiff, a little glycerine should be brushed on two or three times a week.

Warbles, Sitfasts, Harnessgalls, and other local evidences of too much friction and pressure, are best cured by rest, gentle fomentations, and an application of arnica liniment. Many other common liniments, to be had every where, will answer the purpose of keeping the parts soft and stimulating natural action.

Swelled legs will come to almost any horse on being changed from pasture to stabling, and in that case will disappear with use. Other horses have it in a chronic form every morning, the swelling going off as they are worked in. Too long standing on hard floors, or a general weakness, may also cause swelling. In any case the treatment must be guided by the cause. When the weak horse gets stronger his legs will get well, and no medicine will strike at them

directly. Bandages and bathing, with gentle rubbing, are the only local applications, but in any case exercise is desirable.

Chapped Heels, the skin cracking and exuding a watery eruption, are very common consequences of careless stabling in bad weather. Rub in cerate of acetate of lead every night, to make the skin soft and keep it from cracking, and in the morning rub in common glycerine before taking the horse out.

Scratches is a worse form of chapped heels, and is peculiarly common in the prairie countries. The discharge itself then becomes foul, acrid, offensive, and spreads the disease. The treatment is simple. Cut off the hair over the diseased part, and wash thoroughly in warm soapsuds. Rinse well and dry, and then gently apply a very mild solution of chloride of zinc. Begin with thirty grains to a pint of water, but make it stronger for chronic or obstinate cases. Half an hour afterwards gently rub in glycerine. Keep up this treatment, and from time to time scrape or cut away the dead matter that will be left. With some horses the disease becomes constitutional and keeps breaking out afresh. In such cases the surgeons advise a wineglass full of liquor arsenicalis, given with the food twice a day for eight or nine weeks, as a specific.

Corns and Sandcrack, generally the consequences of bad shoeing and subsequent neglect, require, in the first place, long rest, for a cure, and in the second a shoe especially adapted to the individual case, and which can only be devised and fitted by a competent farrier. Such directions as we could give, or as are ordinarily given in popular works on farriery, will

neither aid nor dispense with the skill of the "expert."

Quittor is a chronic abscess in the foot caused by some external bruise or other injury. It is indicated by an opening in the horn, emitting a foul discharge. The sore must be probed and a way made for the pus to come out, but here again it will be necessary to call in the aid of practical experience.

Thrush is an offensive discharge from the frog. If caused by a damp stable floor, or standing too much in a yard choked with manure, *that* treatment must be promptly reversed, and the softening of the part further checked by an application of tar ointment. If then the decomposition does not stop, or the hoof dry and harden, wash it daily in a solution of chloride of zinc, five grains to an ounce of water.

If the thrush is a simple inflammation of the sensible frog, and a spongy substance is deposited instead of horn, the frog will look uneven and ragged, break away in places, have a greasy surface, smell foul and feel hot. The cause is here internal as well as external. Give a dose of physic, reduce the food, give very little corn, exercise the horse, keep the feet and the stable clean and dry. Then keep on a bran poultice several days, until the inflammation subsides. After this use tar ointment or solution of chloride of zinc, as prescribed above.

Dr. Walsch describes a third kind of thrush and its treatment thus: "It occurs in contracted feet, and is due to chronic inflammation of the sensible frog, produced by overwork, aided in many cases by neglect in

shoeing. There is a tendency to the secretion of unsound horn over the whole foot, sometimes too thick and hard, and at others of a cellular structure, without sufficient strength to bear the pressure of the road. The horny frog generally looks shrunken and withered; and in its cleft there is a foul discharge, on wiping out which a soft spongy matter may be seen at the bottom, which is the sensible frog itself, but in a diseased condition. In bad cases, the sides of the horny frog have separated, and even the toe is sometimes deficient of its covering; but generally the horn has only disappeared in patches, and there are ragged portions remaining. The disease here is of too chronic a nature to be easily cured, and if there is much disorganization of the laminæ it will be almost impossible to effect a perfect cure. The first thing to be done is to clear away all the ragged portions of horn, so as to be able to reach the sensible frog. Some tow is then to be smeared with the following ointment:—Take of

Ointment of Nitrate of Mercury					1 drachm.
Zinc Ointment	...	...	...	...	1 oz.
Creosote	...	...	...	...	4 drops.
					Mix.

and pressed into the cleft of the frog, where it can best be retained by a bar-shoe lightly tacked on, and in this case taking its bearing on the heels and not on the frog. Sometimes a wash answers better than a greasy application, and then a strong solution of the chloride of zinc may be employed, about six grains to the ounce of water. Tow dipped in this may be applied in the same way as with the ointment, and either one or the

other should be re-applied every day. As the new horn grows, it must be kept supple by tar ointment, and until it is fully developed, the bar-shoe should be kept on, applying some degree of pressure by means of the tow, which should be stuffed in so as to compress the frog, beginning with very light pressure, and, as the horn increases in substance, augmenting it in proportion. By attention to these directions a thrush of this kind may be cured, if the foot is not damaged throughout, and even the frog may be restored to a comparative state of health."

Founder, or fever of the feet, called by the surgeons "**laminitis**," is only too common. It is either an acute or chronic inflammation of the parts between the crust or wall of the hoof and the pedal bone, and these parts are so full of blood vessels that when once the disease starts it grows rapidly. The causes are—any fever "settling" in the feet; severe use on hard roads; long standing on a hard floor.

It is a treacherous disease in its chronic form, and often goes on without being noticed until the horse is ruined. When "acute laminitis" sets in, there will be the usual signs of fever; quick, strong pulse; hurried respiration, with restlessness as if from pain: the horse tapping the ground lightly with his feet, lying down and getting up. If the founder is only in the forefeet, and this is usual, the horse will throw all the weight he can on his hindfeet. He will object to having his hoofs taken up, and they will feel very hot. If something is not promptly done, the animal has lost his usefulness. Remove the shoe, pare down the sole, so as to permit internal expansion, and bleed copiously from

the toe. Next tack the shoes on lightly again, and then give a smart dose of physic, or else, what is perhaps a better plan, give the following:

Take of Barbadoes Aloes	...	1	drachm.
Tartar Emetic ...	...	1	„
Powdered Digitalis	...	$\frac{1}{2}$	„

Syrup enough to form a ball,

which should be given every six hours, until the bowels act, when the other materials may be continued without the aloes. The feet should be kept constantly wet and cool, by tying a piece of felt or flannel around each pastern, and allowing it to fall over the hoof, when it is to be continually wetted. If the inflammation is not abated next day, the bleeding may be repeated, and it will be well also to act on the kidneys by adding two or three drachms of nitre to the tartar emetic and digitalis.

The chronic form of this disease is, as has been said, treacherous, coming generally in both forefeet at once, so that the horse does not favor either one especially, and careless eyes do not discover the difficulty. On coming in from work a heated feeling will be found at the coronet, but this goes off during the night. After a month or so, the nails of the shoe do not hold so well, and the quarters break away, while the horse becomes shambling in his action. He will not go well on a hard road, or under the saddle, though he may go well enough on a soft road, or in harness. He will exhibit a disposition to save the toes of his forefeet, and this will give him a very low and shambling movement. This will

catch experienced eyes at once, and any one may take "founder" for granted, when he sees a horse carefully putting his heels down first, with low action. The best preparation for such a detection will be the continued study of the action, and "foot fall" of sound and active horses. The outer shape of the hoof undergoes a change after awhile, but not until the disease has advanced beyond cure. The sole, however, is always flatter than usual, or it may even present a "bulged" appearance, while the horn of the hoof becomes brittle and spongy. This latter makes what is known as "pumiced foot." The frog becomes unnaturally large and spongy. The effect of the disease is to throw the whole weight of the horse on the parts below the coffin-bone and navicular-bone.

For cases of long standing very little can be done in the way of a *cure*, though the disease may be so got under control that the animal is worth something for some kinds of work.

Do not bleed the foot unless there is marked inflammation that cannot be otherwise reduced. Keep the horse from all heating food, and allow him as small a ration of oats as is consistent with keeping up fair condition. Keep the stable dry and cool, give an occasional bran-mash, with nitre, and now and then a mild dose of physic, to keep down inflammation, apply cooling devices to the feet after any work or exercise, and avoid hard roads, or any fast or pounding work. In this way, a horse not badly foundered may not only be very useful, but will be likely to improve. If the frog is not very prominent, a leather sole may save it some of the jar, but if it is, the sole must be put in between the foot and

the shoe, and have a hole cut in it to the shape of the frog, so as not to bear on it. If the case is not a bad one, the horse may work with such a contrivance for several years.

If the animal seems disabled, give him soft tan or sawdust to stand on, take off his shoes, blister his coronets two or three times, and do not so much as walk him over hard ground for six months. Then, if he is improved, get him into work again very gradually. He will never again be a reliable road horse, but for farm work, or over turf roads, he may be tolerable well.

Seedy Toe, as it is called, is only one stage and consequence of *laminitis*, and calls for about the same treatment, but very little improvement can be hoped for.

Contraction of the Feet, unless found in connection with actual disease, is a humbug. An examination of the next mule or donkey you may meet will convince you that an animal may have his hoofs in that shape, and never know what disease is.

Navicular Disease, or joint lameness, may come to the best made foot, for it is a "farrier's disease," and generally the result of bad shoeing and hard battering.

The symptoms vary somewhat, but there is always more or less lameness, and it generally comes in both feet at once, so that it may be carelessly overlooked, as in founder. The particular sign is the forward pointing of the toe, and a peculiar rounding forward of the fetlock-joint, in an effort to relieve the navicular-bone of any weight. In the stable, if both feet are affected, the horse will point forward first with one and then the

other, clearly showing his discomfort, and out of doors, the toes will dig into the ground, so that a sufferer from this disease is almost always a stumbler. He will nevertheless *walk* very well, but the moment he is trotted, his shortened gait will tell of him.

Various remedies for recent cases are proposed by different writers, but they are such as require an experienced hand, except that advantage may be gained by standing the horse, daily, for two or three hours, in yielding clay, to lead him to let himself down more on his heels, and give a better chance for nature to work in restoring the injured parts. There is one resource which may seem cruel, but which is often the only thing left, and which will generally restore the animal to something like usefulness, unless there is caries of the bone, or ulceration of the synovial membrane; it cannot be regarded as a "cure," however. This is "neurotomy," or the division of the nerves of sensation which go to the foot. It ought not to be done without evident necessity, and requires a good knowledge of the anatomy of the foot, a clear head and a steady hand. We will quote Youatt's description of it, as it is sometimes advisable in ringbone and other difficulties of the feet:

"The horse is cast and secured, and the limb to be operated on removed from the hobbles, and extended—the hair having been previously shaved from the part. The operator then feels for the throbbing of the artery, or the round, firm body of the nerve itself, on the side of the shank-bone, or larger pastern. The vein, artery, and nerve, here run close together; the vein nearest to the front of the leg, then the artery, and the nerve be-

hind. He cautiously cuts through the skin, for an inch and a half in length. The vessels will then be brought into view, and the nerve will be distinguished from them, by its being behind, and by its whiteness. A crooked needle, with silk, is passed under it, to raise it a little; it is dissected from the cellular substance beneath, and about three-quarters of an inch of it cut out: the first incision being made at the upper part, in which case the second cut will not be felt. The horse must then be turned, and the operation performed on the other side, for there is a nervous trunk on both sides. The wounds are now closed with strips of adhesive-plaster, a bandage placed over them, the head tied up for two days, and the animal kept rather low, and as quiet as possible. The incisions will generally rapidly heal, and in three weeks or a month, and sometimes earlier, the horse will be fit for work."

A healthy, unshod horse, would probably never cut in travelling, and this at once suggests both the cause and the remedy of any such defect. If the cause is overwork, low condition, and consequent weakness, do what you can to feed him up and strengthen him at the same time that you treat him locally. If he has brought out a splint on the cannon bone in any manner, so that he strikes on that, both must be cared for. If his shoeing is bad, have that rectified. The part which he is likely to hit, however, must be padded, stockinged, or booted, and this must be kept on until the soreness disappears, the swelling goes down, and the skin is healed. A bit of carpeting tied on with cloth strips and turned down over the fetlock joint, is a good pad, all the better with a piece of leather over it. Nothing

but laziness will leave on any boot or pad until it has become such a mass of mud and road grit as to wear off the hair like a coarse sandpaper. Very little common cuteness will suffice to fit on a good "buffer" of this kind, and we leave it to your own ingenuity.

What is called "**Speedy Cutting**" is only a worse form of ordinary cutting, requiring the application of some good healing liniment to the injured part, such as arnica liniment, and the continued wearing of a regular speedy-cut boot, in which there is a pack buckled on the inside of the leg, and reaching from the knee to the fetlock. It must be of this length in order to keep its place. Both of these difficulties occur with all imaginable gradations of severity, and must be dealt with accordingly. When they arise from malformation of the horse, or confirmed habit of travelling, there is no remedy but a perpetual use of the padded protector.

Careless smiths will sometimes drive their nails too close to the quick, and this is very apt to happen when the hoof is too much used up, even if the horse has not showed any shrinking at the time. When, on the day after shoeing, a horse which was previously sound, goes lame, and the foot is hot to the touch, it may generally be assumed that a nail or nails have been driven too near to the quick, unless there is evidence of lameness from other causes. On tapping the crust with a hammer, the horse will flinch at some particular spot, and there is the nail which is in fault. Sometimes there is little inflammation as yet set up, but the pressure of the nail is sufficient to cause lameness, and in either case the shoe should be taken off. Then, if there is reason to sup-

pose that matter has formed, the opening from which the nail came out should be enlarged, and the matter allowed to escape. If, however, the foot has been merely "bound," it may be either left to nature, with a shoe lightly tacked on, and a wet "swab" round the coronet, or it may be placed in a bran poultice, which is the safest plan.

When a nail is picked up on the road if it has entered deeply into the toe of the frog, the probability is that the navicular-joint has been wounded, or probably the tendon of the flexor at its insertion into the pedal bone, either of which are very serious accidents. If the wound is further back, there is less risk of permanent injury, as the bulbous heels or cushion of the frog will bear a considerable amount of injury without permanent mischief. In any case the *treatment* should consist in cutting away the horn round the opening, so as to allow of a free escape of matter if it forms. At the same time inflammation should be kept under by cold "swabs to the coronet, or by putting the whole foot into a bran poultice.

Over-reaches when slight, may be treated by the application of tincture of arnica, or other good liniments in full strength, which will have a tendency to dry them up and prevent suppuration. If, however, the heel is very much bruised, a poultice must be applied, but even then a little tincture of arnica should be sprinkled on it. When the bruise is so severe that a slough or core comes away, the wound may be dressed with a piece of lint, dipped in a solution of nitrate of silver, eight grains to the ounce of distilled water, and over this a bran poultice. In most cases, however, it is better to foment

the part well and then apply the tincture of arnica neat.

A **Bruise** on a thin sole will sometimes cause matter to form, in which case the horn must be cut away, and the case treated as for quittor. Before matter forms, the horn should be reduced, and the foot should be placed in a cold bran poultice.



CHAPTER TWENTY-SECOND.

FEVER—TYPHOID FEVER

FEVER—TYPHOID FEVER—GLANDERS—FARCY.

FEVER in the horse is not generally anything more than an incident or accompaniment of other disease, such as we have already described. As an external symptom and warning, it may even be said to have its valuable uses. In all such cases the treatment should be directed towards the cause, or if aimed at the fever itself, only so far as that is part and parcel of the real difficulty under which the animal is suffering. In this country, however, more commonly than in Europe, horses are subject to diseases similar in cause and character to those in the human system which are known as "fevers" of various kinds and types.

Simple Fever as we may call it almost duplicates human symptoms. It shows itself by dulness and reluctance to move, a staring coat, and cold legs and feet, with increased warmth of the body. The pulse is quick, soft, and variable—breathing a little accelerated, but not much—appetite entirely lost—bowels confined, and urine scanty. Those symptoms continue for two or three days, and then either go on into the typhoid form, or they are complicated by inflammation in some organ of the body. The *treatment* merely consists in giving a

mild dose of physic, followed by a febrifuge drink, such as the following:—

Take of Spirit of Nitrous Ether	1 oz.
Nitre	3 to 5 drachms.
Tincture of Ginger ...	2 drachms.
Camphor Mixture	6 oz.

Mix, and give twice a day.

Typhoid types of fever are more common in those parts of the United States where they also afflict the human race, and are likewise prone to assume an epidemic. To this class we may assign the "black tongue" of the Southwestern States; the "choking fever" of the Middle States; the "putrid fever" of the West and Northwest; and several other local names of the same general distemper. Symptoms will vary as a matter of course, but there are strong points of resemblance which cannot fail to serve as a guide.

The first signs present little more than debility, but, if any such disease is known to be prevalent, they should be watched for, and promptly attended to. The next is a difficulty in swallowing. Hence the name "choking fever." Then with still failing strength, the breath of the animal becomes fetid, the tongue is discolored, and there is a black discharge from the tongue and gums. Hence the names "putrid fever," and "black tongue." There is very little danger that any one who has ever seen one case will fail to recognize the next, so soon as the symptoms become at all pronounced. The first thing to be done is to get the horse into a dry place, away from low ground or miasma, or the neighborhood of other animals similarly affected. If he is

R

too weak to stand, at any time, do not let him lie too long on one side, but turn him over morning and evening. The disease is generally of a rapid and peculiarly fatal nature, but we give two prescriptions, that first from Dr. Walsch, and the second from the very able American editor of his book to which edition, by the way, we would refer our readers, for a most valuable collection of skillful information and common-sense advice, which could not be embraced in a smaller work. We regard every good "horse book" as a public benefaction.

The treatment should be of the most generous kind, as soon as the bowels have been gently moved, which should be effected, if possible, by injection. Then give a ball two or three times a day composed thus :

Take of Carbonate of Ammonia	$\frac{1}{2}$ to 1	drachm.
Powdered Ginger	1	"
Powdered Yellow Bark	3	"
Syrup enough to make into a ball.		

This should be washed down with a quart of ale caudle and hay tea should be allowed as the drink *adlibitum* ; or if there is diarrhœa, rice-water may be used in the same way. Few cases, however, will recover, in spite of every exertion, and careful treatment on the part of the attendant.

Or, give the following in a drench, morning noon and night :

Cold Water	1	pint.
Powdered Carbonate of Ammonia	$\frac{1}{2}$	oz.
Capsicum	1	drachm.
Powdered Pimento Berries ...	$\frac{1}{2}$	oz.
Tincture Nux Vomica	20	drops.

If the horse cannot swallow, drench him with cold water and meal several times daily—adding thirty drops of commercial sulphuric acid to the drench.

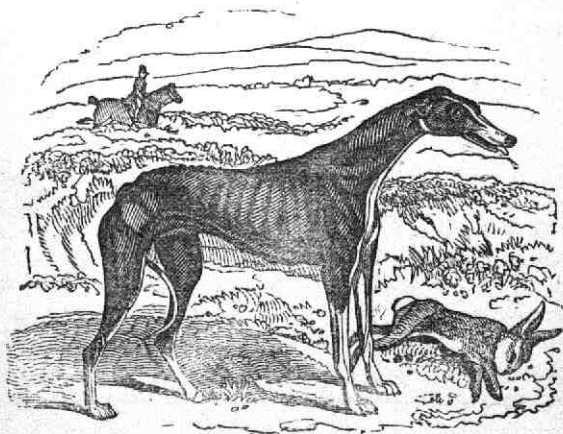
If there is one horse ailment more than another to be dreaded, a sort of nightmare of horse owners it is the **Glanders**. Nothing could be more subtly and dangerously infective, and men as well as beasts are liable to be the victims of its destructive contagion. Until within a very few years it was but little understood and was regarded as incurable. It certainly is so, unless taken hold of in its earlier stages. When a cough in connection with glanders, indicates diseased lungs, or when what we describe below as the "second stage" has become confirmed, no remedies will be likely to avail, and the animal should be destroyed to prevent contagion. The disease, in the **First Stage**, seems to be confined to the inside lining of the nostrils, which will become of a leaden or purple color, sometimes deep, but generally very light and pale, and not of the red shade produced by chronic catarrh. There will be a thin, acrid, odorless, transparent discharge from one nostril only, rarely from both. The horse may otherwise seem as well as ever and go on with his work, but he should be immediately put by himself, in a dry and well ventilated stable. Give him at morning, noon and night, every day, half an ounce at a time of sulphate of soda, and five grains of Spanish fly once a day, and feed him generously to keep up his system. Keep up the treatment till every trace of the disease is removed, or until the appearance of worse symptoms declare the animal's death sentence. This may require several weeks.

In the **Second Stage**, the discharge increases in quantity, and though still watery and transparent, it is slightly sticky, indicating the pressure of mucous. The lymphatic glands below the jaw enlarge, and become adherent to the bone, feeling hard to the touch and almost like exostosis. Here the permanent character of the discharge and the adherence of the glands to the bone distinguish it from chronic catarrh. In the **Third Stage** the discharge increases rapidly and becomes yellow and opaque—in fact, it is pure pus. If the nose is carefully examined, its lining membrane will be seen to present one or more sores, with depressed centres and ragged edges, and surrounded by small varicose vessels leading to them from all directions. In proportion to the extent of the local mischief, constitutional disturbance is displayed. The appetite fails—the horse loses flesh and spirits—the coat is turned the wrong way—the skin is hidebound, and the legs fill slightly during the day, but go down at night—the nose is, at last, frightfully ulcerated, the sores spreading to the larynx—ulcers break out on the body—and the horse finally dies, worn to a skeleton.

No man with any regard for himself or his neighbors will keep a horse who has developed any of these later symptoms of glanders.

Farcy is supposed to be of the same cause and nature as glanders, and is equally dangerous and infectious. If taken in its earlier stages it may yield to a precisely similar treatment. If it gets beyond them, there is nothing for it but to destroy the horse at once, before more harm is done. The disease first shows itself in one or two small hard knots in the skin, called

“farcy buds.” These soon soften, forming small quantities of pus. Then other buds form, usually in the thin skin of the inside of the thighs and arms, or on the neck and lips. They vary in size from a quarter to a half-dollar piece. The remaining symptoms resemble those of glanders, and the horse wastes miserably away and dies, if his owner does not wisely and humanely anticipate the decease with a bullet.



CHAPTER TWENTY-THIRD.

BREEDING.

INFLUENCE OF SIRE AND DAM—HEAT—INHERITANCE OF QUALITIES — AGE — SIZE—FOALING—WORKING MARES—WEANING—FEEDING—HANDLING.

IT is generally considered that the horse has more to do with the special characteristics of the colt than the mare, but it must not be forgotten that before birth and for some time afterward the young one gets all his nourishment from his mother, and his health and constitution cannot fail to depend very much upon the condition of her own. In fact, the preponderance of the influence of either the male or female parent upon the character of the colt will depend very much upon the relative strength of their nervous systems at the time of coition. Hence the impossibility of laying down any general law. In the employment of any given broodmare for the first time, it must be borne in mind that every subsequent colt she may have is likely to bear traces of that first impregnation. Do not start her with an inferior horse. Not only natural but acquired qualities are transmitted, whether they belong to the sire or dam, and also both bodily and mental. As bad qualities are quite as easily transmitted as good ones, if not

more so, it is necessary to take care that in selecting a male he is free from bad points as well as furnished with good ones. It is known by experience that the good or bad points of the progenitors of the sire or dam are almost as likely to appear again in the offspring as those of the immediate parents in whom they are dormant. Hence, in breeding, the rule is, that like produces like, or *the likeness of some ancestor*.

The period of "heat" is marked by certain discharges and other symptoms in the mare, and the horse will show it plainly enough, and the latter part of the time of heat is considered the best and surest.

In this country our mares are generally of a more "mixed" descent than our breeding stallions, and as pure blooded animals transmit more of their own nature to their offspring, this adds very materially to the greater importance of the selection of the male. We do not generally find ourselves in danger of too much "in-and-in" breeding, and need not discuss that point, except to say that "once in and once out" has been accepted as a good rule among very successful breeders.

You cannot expect a slow, stout mare, with no fast ancestry, to bring you a rapid traveller from ever so fast a stallion, but that colt, if a mare, will do a great deal better when her turn comes, and so on. When single instances of apparent good luck seem to contradict this rule, an explanation will generally be found by going back two or three generations, if that is at all possible.

Do not expect to make an arithmetical example of a horse and mare, and produce a colt representing

both of them in any exact proportion. The young animal will be heir not only to his own father and mother, but to theirs before them, and the sum total of his "birthright" is quite likely to be a puzzle of reproduction.

There can be no doubt, however, of the importance of noting the health, habits, vices and other peculiarities, of both sire and dam, and of avoiding anything in either which you would consider undesirable in the colt.

Do not let both horse and mare be either very young or very old. If one is young, let the other be older, and *vice versa*. Many of the best horses on record have been begotten by vigorous old stallions of seventeen to twenty-two years, and the same is true of sound old mares, and age is no bar to success,* but such instances are rare where both parents were old or feeble. The general rule adopted by English breeders is that the dam should not be less than three years old, and the sire at least seven. We should much prefer the mare to be at least five.

The *size* of a colt will be governed less by the accidental bulk of either of his parents than by that of their "line" or breed, and this occasions not a few disappointments, both pleasant and unpleasant.

Mares of moderate size are generally stronger and make better breeders than large ones, unless the latter come from an exceptionally large breed.

Bearing these hints in mind, and using a fair degree of judgment, almost anybody can manage to secure colts that it will be worth while to raise.

Keep the mare up near the stable at foaling time, and she will be pretty sure to give a few hours notice of what is coming. After foaling keep mother and colt enclosed by themselves, if possible, until the latter is able to take care of itself, somewhat. We lost a very nice colt, a while ago, by neglecting this. Do not forget that colts are full of mischief and nonsense, and will be very apt to hurt themselves if they have a chance.

As to *working* brood-mares, all mares are the better for moderate work up to within two months of foaling, but care should be taken not to urge them or over-drive them.

Mares should be so timed that the foals may be dropped about the time grass becomes good for the mother, and out-door weather fairly steady, and this varies too much in our broad territory to give a rule.

When the mare is in foal, if not intended to be kept at work, she should be turned out in good pasture; but it should not be so rich and succulent as to disagree with her stomach, or make her unwieldy from fat. The former mistake is a constant cause of miscarriage, the bowels becoming relaxed from the improper nature of the food. On the other hand, if it is not sufficiently good, the mare will become thin, and will starve her foal in its growth. Mares that have been corned highly all their lives should have a feed or two daily, after they are six months gone, and especially if the autumnal grasses are not rich and plentiful. Most animals, however, do very well till about Christmas; after which, hay and corn, with a few carrots, should be liberally given them, still allowing them to pick up

what grass they can find. Excessive fat interferes with the due nutrition of the *fœtus*, while it is very dangerous at foaling-time, when it not only interferes with the process, but also tends to produce fever. Supposing the mare to be at work, she should have some kind of green food. Any of the grasses or clovers answer well; and, after they are done carrots are excellent, given sliced in a bran-mash every night. By adopting these articles of food, the mare is kept free from inflammation, and yet the foal is well nourished, which are the two essential points to be considered.

Excitement of every kind is a fertile source of "slipping" the foal; and everything which is at all likely to have that effect should be carefully avoided. The smell of blood is said to have a very prejudicial influence in this way. If a mare has "slipped" a foal in a previous pregnancy, **DOUBLE CARE SHOULD BE TAKEN**, as she will be far more likely to do so again than another which has hitherto escaped the accident. It occurs most frequently about the fourth or fifth month, therefore extra care should be taken at that time. Purging physic should not be given, unless it is absolutely necessary; and if the bowels are so confined as to require some stimulus of this kind, and bran-mashes and other changes in the food fail to produce any effect, choice should be made of the mildest aperient which is likely to answer the purpose.

At the time of foaling, the mare will to a great extent take care of herself, but if you can have experienced assistance at hand it is well to do so.

A good healthy mare is very little exhausted by the birth of a foal, and if the weather is good, she may be

let out in a couple of days. Care should be taken as to what other animals are permitted in the same enclosure avoiding vicious or ugly tempered brutes. Until the grass is plentiful see that the mare has plenty of good food. Carrots, bran-mashes, oat-gruel, cut-clover, nothing nice and succulent is likely to come amiss, and both mare and colt will show the good effects. If otherwise in good health, neither mare nor colt require other attention than good shelter from bad weather and regular feeding, during the rest of suckling time. At weaning time, the mare is generally nearly dry, and needs no help. If otherwise, a dose of some cooling medicine may be beneficial.

The future value of a horse depends a good deal upon his treatment when a colt. He will get along splendidly by himself for his first summer, accidents and diseases excepted, but will be all the better, after his second month, for a small feed of bruised oats daily. Shelter from storms he must have, and particularly when the chilling weather of later autumn comes on. In winter he must have a place to get warm in and something dry to stand on, if he is to develop a sound constitution. Cruelty and neglect are miserable waste, and a man who is careless of his colt is throwing away his horse. The care, however, must not be unnatural, or such as will make the animal tender and helpless. Make him take the cold, dry air, and trust his young blood that he will take all the exercise he can get.

If we were asked at what age "training and breaking" should begin, we should reply, "By no means before the colt is born." As soon as possible afterwards,

he should be made familiar with gentle handling, and gently taught to obey. Rough language, rough handling, teasing, anything that will startle or scare him, any show of bad temper at his caprices, will surely give his education a wrong turn. This is the time when the horse begins to collect his habits, bad and good, as well as to show what he has inherited. If the latter is bad it can be mostly got rid of now. The process of handling must be gradual, and without any unnecessary "foolery." Before weaning, and about the fourth or fifth month, it will be well to put on a light headstall, and after that a leading rein, and the little fellow can be taught to follow and obey in such a way that he will never dream of resistance. It will be *nature* to him. After the sixth month, in which a colt is usually weaned, the process of feeding will give good chances for carrying on his education, and, if his feed and care are what they ought to be, his growth need have no check, and his temper may almost invariably be kept good.



CHAPTER TWENTY-FOURTH.

TRAINING FOR WORK.

THE idea of breaking a colt to work seems to be naturally associated in the minds of most, and especially the inexperienced, with overcoming some terrible natural obstacle by a combination of human force and fraud, and the product of many generations of domestic use and education, familiar from his birth with human companionship and the ways of men, is practically put upon the same level with the wild horse of the savannas, or even the vicious carnivora of the menagerie. The common sense and sound teaching of these latter days has done much to dissipate such erroneous and hurtful notions, but they are still permitted to accomplish a vast amount of needless mischief.

Even the humane doctrines of **Mr. Rarey** and other trainers, are lost sight of by stupidity in a sort of open-mouthed wonder at his conquests over exceptional cases of acquired or inherited vice, and too many are apparently inclined to imagine that the gentle and tractable pets of their own farmyards, the playmates, it may be, of their own children, are under some inscrutable necessity of being "Rarey-fied" before they will take kindly to the weight of the saddle, or the drag of the harness. The writer of this book has no fear of

being contradicted by any respectable trainer in laying it down as a fundamental principle that, other things being equal, that horse will be the best "broken," freest from trick and vice, most reliable and obedient, and, at the same time, the most spirited and enduring, whose course of education has been such that he cannot recall any time when he was not broken. He should have no memory of any hour of great trouble and fear when he first discovered that man was his master, and that all his struggles for freedom were in vain. Here we can do no better than to quote what Mr. Rarey lays down as the net result of his own remarkably wide and varied experience. He says:

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

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

"*Thirdly*, 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."

It will at once be gathered from this that as God intended the horse for the friend, companion and servant of man, he made no blunder in so constituting the animal that men of average sense should be able to turn him to account without great trouble or any cruelty whatever. Of Mr. Rarey's special method in dealing with brutes that have been spoiled in the train-

ing, or whose early education has been neglected, we have no room to speak, and must content ourselves with a few hints concerning the class of colts of which we have been more particularly speaking.

If the owner of the colt has begun with him as we suggested in the last chapter, he will already be accustomed to wear something on his head and neck, and the form and style of this can be so changed, from time to time, that he will find nothing "strange," or alarming, in any sort of headgear. Nor is this attended with any especial expense of time or trouble. Even if haltering has been neglected until the animal is two or three years old, the process of getting him used to it should have as little of suddenness about it as may be.

The next stumbling block is the *bit*, and this should be of a simple form, with side pieces to keep it from slipping in the mouth. The more gradually the colt is taught to bear pressure on his mouth, the less likely he will be to become "hard bitted," and disposed to make the reins and his driver's arms do the work of the traces and singletree. The forms and styles of "breaking bits" are numerous now-a-days, and none of them are very bad if they are used rightly. Do not attempt to teach the colt what the bit is put in his mouth for until he has become somewhat indifferent to having it there. He will readily consent to receive ideas and orders through it, as if it was, in a way, a part of himself. Do not forget that a badly educated mouth means a badly trained horse. The whole business of management hinges upon this beginning. If the colt for any reason, takes unkindly to his biting, keep him

in the stable, and keep his head down somewhat with a martingale.

Do not carry this too far, however, for at all stages of his training the horse must be accustomed to exercise with his gear on, whatever it is. The more he can be taught to bear pressure on his bit by a gentle human hand on the reins, the better, and if a surcingle is employed, the reins should be drawn little by little, so that the animal can at any time relieve the pressure on his mouth by lowering his head. The more quiet handling and kind words you can give him, the better, varying the time taken for each successive lesson according to the temper shown, and the tractability of the animal, for no two horses are exactly alike in their requirements.

The next point of education is the surcingle, of which the colt should be allowed a good smell, and which should be rubbed over him until he is no longer afraid of it. The buckling on and tightening should not be hurried, especially with thin-skinned and nervous fellows. Even with such we have passed readily from surcingle to blanket, and from that to pad and saddle, without a single vicious plunge, or anything like a "scare."

If the horse is to be saddle-broken first, which is generally easiest and best, he should be taught the meaning of the reins, and become accustomed to the pressure of the saddle, and some light weight on it, as well as to the jingle and motion of the stirrups, before he is mounted. The first mounting is necessarily quite an event in the life of a horse, however carefully he may have been prepared for it, though some will take it

quite as a matter of course, and make almost no fuss at all. Another writer, who evidently agrees with us, says :

“The breaker should during the last week’s exercise, before mounting, put on a saddle instead of a roller and surcingle, keeping it in its place by *loose* girths and a crupper. Every day he should bear occasionally upon the stirrups, smacking them against the saddle, and thus accustoming the colt to noises, and also to pressure on his back. When all is ready, he has only to put his foot in the stirrup, standing with his back to the shoulder, and then, after partially rising two or three times, and coming down again, he finally plants himself firmly in the saddle. Most careful breakers have a roll of cloth buckled firmly in front of their saddles ; and with this precaution, even if the colt bucks or kicks, it is almost impossible for him to dislodge them. When thus mounted the breaker should be in no hurry, but let the colt get accustomed to the intruder. Let him wait till the pupil has somewhat recovered from the shock, and then only let him urge him forward at as slow a pace as he likes. If all has been conducted well throughout the preliminary stages, and the colt is good-tempered, he will walk away quietly enough, and generally no trouble will be given for a day or two ; when, probably, there will be some slight fight, which may be either in causing the pupil to go where he does not want to go, or in making him face some object which frightens him. At first, neither whip nor spur should be used, for the object of neither is understood ; and if the colt will not readily move forward, he should be led or driven by an assistant, and not whipped or spurred

by his rider. In process of time, however, he is made gradually to understand these signs by the tact of the breaker; and then if he offends, he must be punished accordingly, but it must always be remembered that the fault must be met immediately, or not at all."

We have long held the opinion that horses generally laid the foundation, so to speak, of their worst faults and tricks, in their very first experiences, at any kind of work, and probably often in incidents or accidents that were unnoticeable at the time.

It is partly for this reason that we urge so strongly that the "breaking" process should be attended with the very least possible degree of pain or fear. At no other time is courage, patience and thorough good temper of such importance on the part of the trainer. For this reason also, we would not allow a timid, quick-tempered, cruel or ignorant person, to have anything to do with a colt, at any time, as such a person would be so very likely to do or omit something, in a way to permanently diminish his value or usefulness. If an unbroken colt comes into the hands of any of our readers, and they desire to experiment on him, we would advise, before going on with our instructions, that the first step should be to so make the stranger's acquaintance that he will feel entirely "at home and among friends" before anything more is attempted with him. If this cannot be done, for any reason, why, then the ordinary methods must take their course, hit or miss, with a fair chance for making some kind of a "miss."

If a colt has progressed so far that he will go kindly under the saddle, and has learned to have some confidence in his rider, or if it is not intended to saddle-

break him, and he has been pretty thoroughly bitted and taught the meaning of the reins, the next step will probably be to break him to harness. This ought to be a very easy and simple process, if the colt is so taught not to fear his harness that his first lesson is reduced to the mere fact of pulling. If the colt is at all shy or nervous, it would be well to put on and take off the harness for several days in succession, before going any farther. He should be made especially familiar with his collar, both by sight and smell, and it should from the first be put on over his head in the ordinary way, so that he shall know just what it is that is pressing on his shoulders when he begins to pull. That knowledge may save him a deleterious fright and consequent backing and plunging.

It may be that circumstances, will compel you to break the colt by himself, in single harness, and this may have its advantages enabling you to humor him and let him take his own time in getting used to his new circumstances. The better way, probably, is to take advantage of the fact that the horse is a very imitative fellow, and very apt to be reassured by the company of one of his own kind, and put him in for the first time in double harness with some steady-going and reliable old roadster, who will start and stop at the will of the driver, and force his young companion to do the same. For our own part, we would drive a green horse double for a good while, if possible, before allowing him to be put in by himself. Even then it may be found that he hardly understands himself or knows what to do. It is a curious fact that an horse who has been used several times as a "break horse," will take quite an in-

terest in the education of his young companion and be of more than a little service. Do not employ in such a capacity a beast that has shown any signs of vice, unless you desire to get into the worst kind of a scrape with both of them.

Be sure that you have not provided too heavy a pull for your pupil, to hurt his shoulders at first, and give him such a disgust with his collar that he will be inclined to back or baulk the next time he feels its pressure. Put in the old horse first, and have things headed right and all clear for a sudden start, if one should come. Then lead up the colt quietly, with all his harness on. Crowd him gently into his place. Buckle up as near like lightning as you can without making the least degree of fuss or worry. Then the driver may spring to his seat, take the reins, and *say nothing*. No shouting, no whipping, only a quiet chirp to the old horse, and no notice to the young one, and the chances are three to one that the pair will step right off without a sign of resistance from the colt. If he should rebel, the conduct of the driver may depend somewhat on that of the colt, with this proviso, THAT STEADY PATIENCE AND PLENTY OF TIME ARE WORTH ALL THE LASHING IN THE WORLD.

Do not drive very fast, no matter how well you get off, and travel straight on without stopping until you are sure that your pupil begins to feel some degree of ease at his work. This will of course require a longer time if there has been anything of a struggle or bad temper at the outset. You may drive three or four miles, perhaps, and then, if all is going well, try a few lessons in stopping or starting, or in turning. Do not

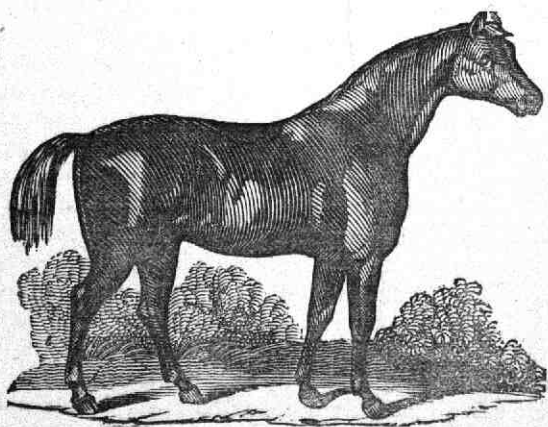
do this, however, if you have had any trouble, but leave it until next day, contenting yourself with what you have taught at the collar. And now do not overdo this, but hasten home before the colt's shoulder is over tired or rendered likely to be stiff next day, for if it is he will be sure to flinch and back, and your second lesson will be harder than your first. This is one of the ways in which bad backers are made. By degree the colt will learn all that you can teach him in double harness, and become as steady and reliable as his veteran companion.

As a general thing there is more to be feared from a colt's first attempt to pull alone than from the experiments which we have described, as in the latter case the companion horse counts for a great deal, and the sense of independence seems to have a natural tendency to "bring out the bad," whether of temper or timidity. Therefore it is well to use some care on the first trial, and to provide for emergencies. Use a strong harness and a "break-wagon," if you can get one, the latter high enough to make it almost impossible for the horse to kick over the bar. Always put on a kicking strap and safety rein, for fear of accidents, and have the tugs open above so as to drop the shafts into them. If all things have been well managed hitherto there will probably be no trouble, and if there is it will be in starting, in the absence of the other horse. In the absence of any cause of fright, strong arms and a steady hand will pretty surely prevent a runaway—and it *must* be prevented—but for refusing to start it is best to wait patiently. It is not time yet to use the whip, except in rare cases. Backing is not often tried, but if it is

every exertion should be used to make the attempt absolutely unsuccessful. If we were asked what was the one most important piece of harness in teaching a horse to work, we should unhesitatingly answer, "the patience and courage of his driver."

It is of more importance with young horses than even with old that the harness should sit easily upon him, so as not to chafe or gall, and that no work should be required beyond the animal's reasonable strength.

The next care should be against fright, or the acquisition of real or pretended tricks of fear concerning particular objects. A LITTLE CARE AT THE BEGINNING WILL SECURE COMFORT AND SAFETY IN USE AND HIGHER PRICE ON THE DAY OF SALE.





THE CELEBRATED
Dr. Chase's
FARRIERS' RECIPES.

CHOLIC.—CURE FOR HORSES OR PERSONS.—
Spirits of turpentine 3 ozs. ; laudanum 1 oz. ; mix,
and give all for a dose, by putting it into a bottle with
half pint of warm water, which prevents injury to the
throat. If relief is not obtained in one hour, repeat the
dose, adding half an ounce of the best powdered aloes,
well dissolved together, and have no uneasiness about
the result.

SYMPTOMS.—The horse often lies down, suddenly ris-
ing again, with a spring ; strikes his belly with his hind
feet, stamps with his fore feet, and refuses every kind
of food, &c. I suppose there is no medicine in use,
for choleric, either in man or horse, equal to this mix-
ture.

For persons, a dose would be from one to two tea-
spoons—*children or weak* persons, less according to the

urgency of the symptoms, to be taken in warm water or warm tea.

I have been familiar with it for about fifteen years, and know that it has been successful in many cases—all where it has been used. Many think it the best choleric remedy in the world.

2. ANOTHER—Laudanum $\frac{1}{2}$ oz.; sulphuric ether 1 oz. Mix, and for a horse, give all at a dose, in warm water as above. Dose for a person, as the first.

A Mr. Thorpe, of whom I obtained this recipe tells me he has cured choleric in horses in every case with the first dose, except one, and in that case by repeating the dose thirty minutes after the first. There is no question but what it is good, and some would prefer it to the turpentine. I know it is valuable.

Bots—SURE REMEDY.—When a horse is attacked with bots, it may be known by the occasional nipping at their own sides, and by red pimples or projections on the inner surface of the upper lip, which may be seen plainly by turning up the lip.

FIRST, then, take new milk 2 qts.; molasses 1 qt.; and give the horse the whole amount. SECOND, 15 minutes afterwards give very warm sage tea 2 qts. LASTLY, 30 minutes after the tea, you will give of currier's oil 3 pts., (or enough to operate as physic.) Lard has been used, when the oil could not be obtained, with the same success.

The cure will be complete, as the milk and molasses cause the bots to let go their hold, the tea puckers them up, and the oil carries them entirely away. If you have any doubt, one trial will satisfy you perfectly. In places

where the currier's oil cannot be obtained, substitute the lard, adding three or four ounces of salt with it, if no lard, dissolve a double handful of salt in warm water three pints, and give all.

Ring-bone and Spavins—To CURE.—Egyptiacum and wine vinegar, of each 2 ozs.; water of pure ammonia, spirits of turpentine, and oil of origanum, of each 1 oz.; euphorbium and cantharides, of each $\frac{1}{2}$ oz. glass made fine and sifted through gauze 1 dr.; put them in a bottle, and when used let them be well shaken. This is to be rubbed upon the bone enlargement with the hand or spatula, for half an hour each morning, for six or seven mornings in succession. Let the horse be so tied that he cannot get his mouth to the place for 3 or 4 hours, otherwise he will blister his mouth and blemish the part. Then let him run until the scab comes off of itself without scraping, which injures the roots of the hair. Then repeat as before, and follow up for 3 or 4 times blistering, and all bone enlargements will be re-absorbed, if not of more than a year or two's standing.

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

2. Add to the above compound, corrosive sublimate in powder $\frac{1}{2}$ oz.; oil of vitriol $\frac{1}{2}$ oz.; and common salt $\frac{1}{2}$ oz.; when it is again ready for use, always shaking well as you use either preparation.

Now clip the hair and prick the bone or callous part as full of holes as you can with a peggin-awl, which is

just long enough to break through the callous part only. Or a better way to break up this bony substance is to have a handle like a pegging-awl handle, with three or four awls in it, then tap it in with a stick and give it a wrench at the same time, which does the hurting part with more speed. This done, bathe the part with vinegar, until the blood stops flowing; then apply the double compound as at first, for four or five mornings only, repeating again if necessary; and ninety-nine out of every hundred ring-bones or spavins will be cured; and most of them with only the first preparation.

The Egyptiacum is made as follows :

3. Take verdigris and alum in powder, of each $1\frac{1}{2}$ ozs.; blue vitriol, powdered, $\frac{1}{2}$ oz.; corrosive sublimate, in powder, $\frac{1}{8}$ oz.; vinegar $2\frac{1}{2}$ ozs.; honey $\frac{1}{2}$ lb.; boil over a slow fire until of a proper consistence. When used it must be stirred up well, as a sediment will deposit of some of the articles.

If the hair does not come out again after using the last blister, use the "Good Samaritan Liniment" freely, on the part; but the first will never disturb the growth of hair. It is best always to commence this kind of treatment early in the season, so as to effect a cure before cold weather comes on. * See page 320.

4. O. B. BANGS' CURE FOR RING-BONE AND SPAVIN.
—Take of cantharides pulverized; British oil; oils of organum and amber; and spirits of turpentine, of each 1 oz.; olive oil $\frac{1}{2}$ oz.; oil of vitriol 3 drs.; put all except the vitriol, into alcohol, stir the mixture, then slowly add the vitriol and continue to stir until the mixture

is complete, which is known by its ceasing to smoke. Bottle for use.

DIRECTIONS.—Tie a piece of sponge upon a stick and rub the preparation by this means, upon the spavin or ring-bone as long as it is absorbed into the parts; twenty-four hours after, grease well with lard; and in twenty-four hours more, wash off well with soap-suds. Mr. Bangs lives at Napoleon, Mich., he says one application will generally be sufficient for spavins, but may need two; ringbones always require two or three applications, three or four days apart, which prevents the loss of hair; if not put on oftener than once in three or four days, the hair not coming out at all. Said to cure wind-galls, splints, etc. He obtained five dollars for curing a neighbor's horse of ring-bone with this preparation; stopping all lameness, but not removing the lump.

5. IN very bad cases of long standing, he thinks it preferable to first apply the following:

Take alcohol 1 pt.; sal ammoniac, corrosive sublimate, and oil of spike, of each 1 oz.; mix.

Apply, by washing off and using lard afterwards, as above directed, washing also forty-eight hours after; and when dry, apply the first liniment once or twice, according to directions. The object of this last is to open the pores of the skin, and soften the lump.

6. **RING-BONE REMEDY.**—Pulverized cantharides, oils of spike, origanum, amber, cedar, Barbadoes tar, and British oil, of each 2 ozs.; oil of wormwood 1 oz.; spirits of turpentine 4 ozs.; common potash $\frac{1}{2}$ oz.; nitric

acid 6 ozs.; and oil of vitriol (sulphuric acid) 4 ozs.; lard 3 lbs.

DIRECTIONS.—Melt the lard and slowly add the acids, stir well and add the others, stirring until cold. Clip off the hair and apply by rubbing and heating in; in about three days or when it has done running, wash off with suds and apply again. In old cases it may take three or four weeks, but in recent cases two or three applications have cured. It has cured long standing cases.

7. RAWSON'S RING-BONE AND SPAVIN CURE.—Venice turpentine and Spanish-flies, of each 2 ozs.; euphorbium and acqua ammonia, of each 1 oz.; red precipitate $\frac{1}{2}$ oz.; corrosive sublimate $\frac{1}{4}$ oz.; lard $1\frac{1}{2}$ lbs. Pulverize all and put into the lard, simmer slowly over coals, not scorch or burn, and pour off free of sediment.

DIRECTIONS.—For Ring-bones, cut off the hair and rub the ointment well into the lumps once in forty-eight hours. For spavins, once in twenty-four hours for three mornings, has perfectly cured them. Wash well, each application, with suds, rubbing over the place with a smooth stick to squeeze out a thick yellow matter.

Mr. Rawson, of Rawsonville, Mich., has cured some exceedingly bad cases of Ring-bones, one as thick as a man's arm; and spavins as unpromising in size. If properly cooked it will foam like boiling sugar.

8. INDIAN METHOD.—Bind a toad upon it; or two, if one does not cover it, and keep it on from 8 to 10 days.

An Indian cured a horse in this way, near St. Louis, for which he coveted, and received a rifle. The cure proved permanent.

9. BONE-SPAVINS—FRENCH PASTE—\$300 RECIPE.—Corrosive sublimate, quicksilver, and iodine, of each 1 oz.; with lard only sufficient to form a paste.

DIRECTIONS.—Rub the quicksilver and iodine together, then adding the sublimate and finally the lard, rubbing thoroughly.

Shave off the hair the size of the bone enlargement; then grease all around it, but not where the hair is shaved off; this prevents the action of the medicine, only upon the spavin; now rub in as much of the paste as will lie on a three cent piece only, each morning for four mornings only; in from seven to eight days the whole spavin will come out; then wash out the wound with suds, soaking well, for an hour or two, which removes the poisonous effects of the medicine and facilitates the healing, which will be done by any of the healing salves; but I would prefer the green ointment to any other in this case.

Mr. Andrews, late of Detroit, who during his life, knew a good horse, and also desired to know how to take good care of them, did not hesitate to pay three hundred dollars for this recipe after seeing what it would do; he removed a spavin from a mare's leg with it, and she afterwards won him more than the expense.

10. Bone-Spavins — NORWEGIAN CURE.—S. B. Marshall, the Champion Horse-Shoer, and Farrier, of White Pigeon, Mich., obtained this plan of an old Nor-

wegian Farrier, and also his plan of curing poll-evil, which see, and assures me that he has been very successful with them. I obtained them of him for the purpose of publication, and sincerely think I can recommend them to all who need them :

Take dog's grease $\frac{1}{2}$ pt. ; best oil of origanum $1\frac{1}{2}$ ozs. ; pulverized cantharides $\frac{1}{2}$ oz. Mix, and apply each morning, for three mornings ; heating it in with a hot iron each time ; then skip three mornings, and apply again, as before, until it has been applied nine times ; after which wait about ten days, and if it is not all gone, go over again in the same way.

He says it does not remove the hair, but that it cures the largest and worst cases. He gives a test for good oil of origanum, saying that much of it is reduced with turpentine ; and if so reduced, that it will spread on the skin, like turpentine ; but if good, that it does not spread on the skin, but stands, like other oil, where a drop is put on. I am not certain about the genuineness of this test ; yet I find quite a difference in the spreading of the oils ; for that which is known to contain turpentine spreads fast and freely ; whilst that which is believed to be pure, spreads very slowly, yet does finally spread. The pure is of a dark wine color, whilst the poor is of a lighter shade, and some what cloudy.

II. SPAVIN LINIMENT.—Oils of spike, origanum, cedar, British oil and spirits of turpentine, of each 1 oz. ; Spanish-flies, pulverized $\frac{1}{2}$ oz.

Apply once in six to nine days only—removes the lump of spavins, splints, curbs, etc., if of recent

occurrence; and the man of whom I obtained it, says he has scattered poll-evils before breaking out, with cedar oil alone.

12. ANOTHER.—Alcohol and spirits of turpentine, of each 1 pint; gum camphor, laudanum, and oil of cedar, of each 1 oz.; oils of hemlock and rhodium and balsam of fir, of each $\frac{1}{2}$ oz.; iodine 1 dr.; mix.

Apply night and morning, first washing clean and rubbing dry with a sponge; then rub the liniment into the spavin with the hand. It causes a gummy substance to ooze out, without injury to the hair—has cured ring-bones, also removed the lumps in recent cases. It cured the lameness in a case of three years standing.

13. SPLINT AND SPAVIN LINIMENT.—Take a large mouthed bottle and put into it oil of origanum 6 ozs.; gum camphor 2 ozs.; mercurial ointment 2 ozs.; iodine ointment 1 oz.; melt by putting the bottle into a kettle of hot water.

Apply it to bone-spavins or splints twice daily, for four or five days. The lameness will trouble you no more. I have had men cure their horses with this liniment and remark that this recipe alone was worth more than the price of the book.

14. BOG-SPAVIN AND WIND-GALL OINTMENT, ALSO GOOD FOR CURBS, SPLINTS, RING-BONES, AND BONE-SPAVIN.—Take pulverized cantharides 1 oz.; mercurial ointment 2 ozs.; tincture of iodine $1\frac{1}{2}$ ozs.; spirits of turpentine 2 ozs.; corrosive sublimate $1\frac{1}{2}$ drs.; lard 1 lb.

Mix well, and when desired to apply, first cut off the hair, wash well and anoint, rubbing it in with the hand or glove, if preferred. Two days after, grease the part with lard, and in two days more, wash off and apply the ointment again. Repeat the process every week, as long as necessary.

Sweeny—LINIMENT.—Alcohol and spirits of turpentine, of each 8 ozs.; camphor gum, pulverized cantharides, and capsicum, of each 1 oz.; oil of spike 3 ozs. Mix.

Perhaps the best plan is to tincture the capsicum first, and use the tincture instead of the powder, by which means you are free of sediment; bathe this liniment in with a hot iron. The first case has yet to be found where it has not cured this disease when faithfully followed.

2. ANOTHER.—Sal-ammoniac 2 ozs.; corrosive sublimate 1 oz.; alcohol 1 qt.; water 1 qt.; pulverize and mix.

This last has cured many cases of sweeny, and also kidney complaints, known by a weakness in the back, of horses or cattle. Bathe the loins with it; and give one to two table-spoonfuls at a dose, daily.

Poll-evil and Fistula—POSITIVE CURE.—Common potash $\frac{1}{2}$ oz.; extract of belladonna $\frac{1}{2}$ dr.; gum arabic $\frac{1}{2}$ oz. Dissolve the gum in as little water as practicable; then having pulverized the potash, unless it is moist, mix the gum water with it and it will soon dissolve; then mix in the extract and it is ready to use; and it can be used without the belladonna, but it

is more painful without it, and does not have quite as good an effect.

DIRECTIONS.—The best plan to get this into the pipes is by means of a small syringe, after having cleansed the sore with soap-suds; repeat once in two days, until all the callous pipes and hard fibrous base around the poll-evil or fistula, is completely destroyed. Mr. Curtis, a merchant of Wheaton, Ill., cured a poll-evil with this preparation, by only a single application, as the marc estrayed and was not found for two months—then completely sound; but it will generally require two or three applications.

This will destroy corns and warts, by putting a little of it upon the wart or corn, letting it remain from five to ten minutes, then wash off and apply oil or vinegar, not squeezing them out, but letting nature remove them.

2. **POTASH, TO MAKE.**—If you cannot buy the potash, called for in the last recipe, you can make it by leaching best wood ashes and boiling down the lye to what is called black salts, and continuing the heat in a thick kettle until they are melted; the heat burns out the black impurities and leaves a whitish-gray substance, called potash.

This potash, pulverized and put into all the rat holes about the cellars, causes them to leave in double quick time, as mentioned in the "Rat Exterminator." The black salts will do about as well for rats, but is not quite so strong. They get their feet into it, which causes a biting worse than their own, and they leave without further ceremony.

Potash making in timbered lands is carried on very extensively; using the thick, heavy potash-kettle to boil and melt in; then dipping it out into three and five pail iron-kettles to cool.

3. POLL-EVIL AND FISTULA—NORWEGIAN CURE.—Cover the head and neck with two or three blankets; have a pan or kettle of the best warm cider vinegar; holding it under the blankets; then steam the parts by putting hot stones, brick, or iron, into the vinegar, and continue the operation until the horse sweats freely; doing this 3 mornings and skipping 3, until 9 steamings have been accomplished.

Mr. Marshall says, the pipes, by this time, will seem to have raised up and become loose, except the lower end, which holds upon the bone or tendons, like a sucker's mouth; the apparent rising being caused by the going down of the swelling in the parts; now tie a skein of silk around the pipes and pull them out; washing the parts with weak copperas water until the sore heals up and all is well. He told me that he cured, in this way, a horse which had interfered until a pipe had formed at the place of interference, upon the leg, that when drawn out was as long as his finger. See the "Norwegian cure for Bone-Spavin."

4. ANOTHER.—Rock salt and Blue vitriol, of each 1 oz.; copperas $\frac{1}{2}$ oz.; pulverize all finely and mix well.

Fill a goose-quill with the powder and push it to the bottom of the pipe, having a stick in the top of the quill, so that you can push the powder out of the quill, leaving it at the bottom of the pipe; repeat

again in about four days, and in two or three days from that time you can take hold of the pipe and remove it without trouble.

5. POLL-EVIL, TO SCATTER.—Take a quantity of mandrake root, mash, and boil it; strain and boil down until rather thick; then form an ointment by simmering it with sufficient lard for that purpose.

Anoint the swelling once a day, for several days, until well. It has cured them after they were broken out, by putting it into the pipes a few times, also anointing around the sore.

6. ANOTHER.—Poll-evils and Fistulas have been cured by pushing a piece of lunar caustic into the pipe, then filling the hole with currier's oil.

7. ANOTHER.—Corrosive sublimate the size of a common bean, pulverized and wrapped in tissue paper, and pressed to the bottom of the pipes, leaving it in eight days, then take out, and applying the blue ointment, (kept by druggists,) has cured them.

8. ANOTHER.—Arsenic, the size of a pea, treated in the same way, has cured the same disease. But if the Norwegian plan will work as recommended, it is certainly the best of all.

9. ANOTHER.—Oil of vitriol put into the pipes has cured many poll-evils.

I found one man, also, who had cured poll-evil by placing a barrel of water about fifteen feet high, on a platform, upon two trees—administering a shower bath daily upon the sore; drawing the water by a faucet, through a dinner horn placed little end down; tying the horse so as to keep him in position until the water all

runs out. Fifteen or twenty baths cured him, but it broke out again the next season, when a few more baths made a final cure.

Looseness OR SCOURING IN HORSES OR CATTLE—
IN USE OVER SEVENTY YEARS.—Tormentil root, powdered. Dose for a horse or cow 1 to 1½ oz. It may be stirred in 1 pint of milk and given, or it may be steeped in 1½ pints of milk then given from 3 to 5 times daily until cured.

It has proved valuable also for persons. Dose for a person would be from one-half to one tea-spoon steeped in milk; but if used for persons I should recommend that half as much rhubarb be combined with it.

An English gentleman from whom it was obtained, had been familiar with its use nearly eighty years, and never knew a failure, if taken in any kind of seasonable time. The tormentil, or septfoil, is an European plant, and very astringent.

2. **BEEF BONES FOR SCOURS.**—Burn the bones thoroughly and pulverize finely; then give 1 table-spoonful in some dry feed three times daily, until checked.

This preparation has thirty years experience of an American gentleman, near Fentonville, Mich., to recommend it to general favor.

3. **SCOURS AND PIN-WORMS OF HORSES AND CATTLE.**—White ash bark burnt to ashes and made into rather a strong lye; then mix half a pint of it with warm water 1 pint, and give all, two or three times daily.

Whenever it becomes certain that a horse or cow is troubled with pin-worms, by their passing from the bowels, it is best to administer the above, as they are believed to be the cause, generally, of scours, and this remedy carries off the worms, thus curing the inflammation by removing the cause.

Horse Ointment—DE GRAY OR SLOAN'S.—Rosin 4 ozs.; bees-wax 4 ozs.; lard 8 ozs.; honey 2 ozs. Melt these articles slowly, gently bringing to a boil; and as it begins to boil, remove from the fire and slowly add a little less than a pint of spirits of turpentine, stirring all the time this is being added, and stir until cool.

This is an extraordinary ointment for bruises, in flesh or hoof, broken knees, galled backs, bites, cracked heels, etc., etc.; or when a horse is gelded, to heal and keep away flies. It is excellent to take fire out of burns or scalds in human flesh also.

Condition Powders—SAID TO BE ST. JOHN'S—Fenu greek, cream of tartar, gentian, sulphur, saltpetre rosin, black antimony, and ginger, equal quantities of each, say 1 oz.; all to be finely pulverized; cayenne, also fine, half the quantity of any one of the others, say half an oz. Mix thoroughly.

It is used in yellow water, hide-bound, coughs, colds, distemper, and all other diseases where condition powders are generally administered. They carry off gross humors and purify the blood. **DOSE**—In ordinary cases give two teaspoonsful once a day, in feed. In extreme cases give it twice daily. If these do not give as good satisfaction as St. John's or any other condition powder

that costs more than double what it does to make this, then I will acknowledge that travel and study are of no account in obtaining information.

2. CATHARTIC CONDITION POWDER.— Gamboge, alum, saltpetre, rosin, copperas, ginger, aloes, gummyrrh, salts, and salt, and if the horse is in a very low condition, put in wormwood, all the same quantities, viz., 1 oz. each. DOSE—One table spoonful in bran twice daily; not giving any other grain for a few days; then once a day with oats and other good feed.

This last is more applicable for old worn-down horses which need cleaning out and starting again into new life; and in such cases, just the thing to be desired.

Horse Liniments—FOR STIFF NECKS FROM POLL-EVILS.—Alcohol one pint; oil of cedar, origanum, and gum-camphor, of each two ounces; oil of amber one ounce; use freely.

2. ENGLISH STABLE LINIMENT—VERY STRONG.—Oil of spike, aqua ammonia, and oil of turpentine, of each 2 ozs.; sweet oil and oil of amber, of each 1½ ozs.; oil of origanum 1 oz. Mix.

Call this good for anything, and always keep it in the stable as a strong liniment; the Englishman's favorite for poll-evils, ring-bones, and all old lameness, inflammations, etc.; if much inflammation, however, it will fetch the hair, but not destroy it.

3. NERVE AND BONE LINIMENT.—Take beef's gall 1 quart; alcohol 1 pint; volatile liniment 1 lb.; spirits

of turpentine 1 lb.; oil of origanum 4 ozs.; aqua ammonia 4 ozs.; tincture of cayenne $\frac{1}{2}$ pint; oil of amber 3 ozs.; tincture of Spanish-flies 6 ozs. Mix.

Uses too well known to need description. This is more particularly applicable to horse-flesh.

4. LINIMENT FOR ONE SHILLING A QUART.—Best vinegar 2 quarts; saltpetre, pulverized $\frac{1}{2}$ lb.; mix and set in a warm place, until dissolved.

It will be found valuable for spavins, sprains, strains, bruises, old swellings, etc.

Broken Limbs—TREATMENT, INSTEAD OF INHUMANLY SHOOTING THE HORSE.—In the greater number of fractures it is only necessary to partially sling the horse by means of a broad piece of sail or other strong cloth, placed under the animal's belly, furnished with two breechings and two breast-girths, and by means of ropes and pulleys attached to a cross beam above, he is elevated or lowered, as may be required.

It would seldom be necessary to raise them entirely off of their feet, as they will be more quiet, generally, when allowed to touch the ground or floor. The head-stall should be padded, and ropes reaching each way to the stall, as well as forward. Many horess will plunge about for a time, but soon quiet down, with an occasional exception; when they become quiet, set the bone, splint it well, padding the splints with batting, securing carefully, then keep wet with cold water, as long as the least inflammation is present, using light food, and a litle water at a time, but may be given often.

The use of the different buckles and straps will be easily understood.

If he is very restive, other ropes can be attached to the corner rings, which are there for that purpose, and will afford much additional relief to the horse.

I knew a horse's thigh to crumble upon the race-course, without apparent cause, which lost him the stake he would have easily won; he was hauled miles upon a sled, slung, and cured by his humane owner. Then let every fair means be tried, before you consent to take the life, even of a broken-legged horse.

Wound Balsam—FOR HORSES OR HUMAN FLESH.—Gum benzoin, in powder, 6 ozs.; balsam of tolu, in powder, 3 ozs.; gum storax 2 ozs.; frankincense, in powder, 2 ozs.; gum myrrh, in powder, 2 ozs.; Socotorine aloes, in powder, 3 ozs.; alcohol 1 gal. Mix them all together and put them in a digester, and give them a gentle heat for three or four days; then strain.

A better medicine can hardly be found in the *Materia Medica* for healing flesh and wounds in every part of the body, particularly those on the tendons or joints. It is frequently given internally along with other articles, to great advantage in all colds, flatulency, and in other debilities of the stomach and intestines. Every gentleman, or farmer, ought to keep this medicine ready prepared in his house, as a family medicine, for all cuts, or recent wounds, either among his cattle or any of his family. Thirty or forty drops, on a lump of sugar, may be taken at any time, for flatulency, or pain at the stomach; and in old age, where nature requires stimulation.—*Every man his own Farrier.*

Grease-heel AND COMMON SCRATCHES—To Cure.—Lye made from wood ashes, and boil white-oak bark in it until it is quite strong, both in lye and bark ooze: when it is cold, it is ready for use.

First wash off the horse's legs with dish-water or castile soap; and when dry, apply the ooze with a swab upon a stick which is sufficiently long to keep out of his reach, as he will tear around like a wild horse, but you must wet all well once a day, until you see the places are drying up. The grease-heel may be known from the common scratches by the deep cracks, which do not appear in the common kind. Of course this will fetch off the hair, but the disease has been known to fetch off the hoof; then to bring on the hair again, use salve made by stewing sweet elder bark in old bacon; then form the salve by adding a little rosin according to the amount of oil when stewed, about a quarter of a pound to each pound of oil.

2. ANOTHER.—Verdegris $\frac{1}{2}$ oz.; whisky 1 pint, are highly recommended for grease-heel.

3. COMMON SCRATCHES.—Use sweet oil 6 ozs.; borax 2 ozs.; sugar of lead 2 ozs.; mix, and apply twice daily, after washing off with dish-water, and giving time to allow the legs to dry.

These plans have been used for years, by G. Clemm, of Logansport, Indiana, and he assured me that the worst cases will be cured, of either disease, in a very few days.

4. ANOTHER.—Copperas and chamber-lye are known to be good for common scratches, applied, as the last, after washing with dish-water and drying. This last

can be tried first, as it is easily obtained, and if it does not succeed you will not fail with the other.

Saddle and Harness Galls—BRUISES, ABRASIONS, ETC.—REMEDY.—White lead and linseed-oil mixed as for paint, is almost invaluable in abrasions, or galls from the saddle or collar, or from any other cause, it will speedily aid the part in healing.

Applied with a brush to the leg of a horse, the outer coating of hair and skin of which was torn off, caused it to heal and leave no scar. It is good for scratches and all sores upon horses, or other animals, and equally good for men. It forms an air-tight coating, and soothes pain. Every farmer should keep a pot and brush ready for use. White lead is the carbonate of the metal, and when pure is very white. That having a greyish tint is impure, being generally adulterated. For use as a paint, a lead color is produced by adding lamp-black, and a drab or stone color, by adding burned umber.

In applying it for scratches, first wash them clean with soap and water, then apply. Some persons prefer lamp oil. If that is used, you will mix both together until the oil assumes a light straw color. When the horse comes in at night, his legs should be washed perfectly clean and rubbed perfectly dry. Then apply the mixture, rubbing it well to the skin. Two or three applications are sufficient to effect a perfect cure, no matter how bad the case may be.—*Correspondent of the Country Gentleman.*

To give confidence in this, I would say that a lady, at Lafayette, Ind., told me she cured herself of salt-rheum with white lead and sweet oil only.

2. ANOTHER.—Alcohol and extract of lead, of each 2 ozs.; soft water 4 ozs.; spirits of sal-ammoniac 1 oz.; white copperas $\frac{1}{2}$ oz. Mix all and shake as used.

“Knowlson's Complete Farrier” speaks very highly of this last preparation, which can be tried, should the first above fail.

3. SORES FROM CHAFING OF THE BITS.—Chloroform and sulphuric ether, equal parts of each. Keep closely corked.

Sponge off the mouth with water every time the bits are taken out; then wet well with the mixture. It will also be found valuable to remove soreness from any cause, on man or horse.

4. ANOTHER.—White ashes and spirits of turpentine, of each $1\frac{1}{2}$ table-spoonsful; black pepper, ground, 1 table-spoonful; lard to make one pint of all, mix well and anoint.

Heaves—**GREAT RELIEF**.—Heaves, the common name for any difficulty in the breathing of a horse, is susceptible of great alleviation by attention to the character and quantity of food to be eaten by the animal, as every one knows. If a horse suffering from this disease, is allowed to distend his stomach at his pleasure, with dry food entirely, and then to drink cold water, as much as he can hold, he is nearly worthless. But if his food be moistened, and he be allowed to drink a moderate quantity only at a time, the disease is much less troublesome.

A still further alleviation may be obtained from the use of balsam of fir and balsam of copaiba 4 ozs. of each; and mix with calcined magnesia sufficiently thick to

make it into balls; give a middling sized ball, night and morning, for a week or 10 days. This gives good satisfaction.

2. ANOTHER.—An old Farrier assures me that lobelia one tea-spoonful, once a day in his feed, for a week, and then once a week; that you can hardly tell whether a horse ever had the heaves or not.

3. ANOTHER.—H. Sisson, another Farrier, gives me a cure which somewhat resembles the ball first given under this head, and thus each one supports the other.

He takes calcined magnesia, balsam of fir, and balsam of copaiba, of each 1 oz.; spirits of turpentine 2 ozs.; and puts them all into one pint of best cider vinegar, and gives for a dose 1 table-spoonful in his feed, once a day, for a week; then every other day for 2 or 3 months.

The horse will cough more at first, but looser and looser until cured. Wet his hay with brine, and also wet his feed.

4. ANOTHER.—Mr. Bangs, highly recommends the following: lobelia, wild turnip, elecampane and skunk cabbage, equal parts of each. Make into balls of common size, and give one for a dose, or make a tincture, by putting 4 ozs. of the mixture into 2 qts. of spirits; and after a week put 2 table-spoonfuls into their feed once a day for a month or two.

5. ANOTHER.—Oyster shells 1 peck; burn into lime and pulverize; mix a single handful of it with $\frac{1}{2}$ gill of alcohol, then mix it with the oats each morning until all is given.

This for bellows-heaves has done very much good. Horseradish grated and put in with the feed has benefited. Cabbage, as common feed, is good to relieve, or any juicy food, like pumpkins, etc., etc., will be found to relieve very much. Farmers who have their horses always at home, can keep them comfortable with some of the foregoing directions; but broken-winded horses might as well be knocked in the head as to attempt to travel with them, expecting any satisfaction to horse or driver.

6. ANOTHER.—A correspondent of the *Country Gentleman* says that "heaves may be greatly alleviated by feeding with raw fat pork.

"Commence with a piece of pork, say a cubic inch, chopped very fine, and mixed with the wetted grain or cut feed, twice a day for two or three days. Then from day to day increase the quantity, and cut less fine, until there is given with each feed such a slice as usually by a farmer's wife is cut for frying—nearly as large as your hand, cut into fifteen or twenty pieces.

"Continue this for two weeks, and the horse is capable of any ordinary work without distress, and without showing the heaves. I have experience and observation for the past ten years as proof of the above."—[*J., of Burlington, Vt.*]

Distemper—TO DISTINGUISH AND CURE.—If it is thought that a horse has the distemper, and you do not feel certain, wet up bran with rather strong weak lye—if not too strong they will eat it greedily; if they have the distemper, a free discharge from the nostrils and a con-

sequent cure will be the result, if continued a few days; but if only a cold, with swellings of the glands, no change will be discovered.

Shoeing Horses—FOR WINTER TRAVEL.—N. P. Willis, of the *Home Journal*, in one of his recent Idlewild letters, says:

“You have discovered, of course, that you cannot have uninterrupted winter riding with a horse shod in the ordinary way. The sharp points of the frozen mud will wound the frog of the foot; and with snow on the ground, the hollow hoof soon collects a hard ball, which makes the footing very insecure. But these evils are remedied by a piece of sole leather nailed on under the shoe—a protection to the hoof which makes a surprising difference in the confidence and sure-footedness of the animal's step.”

Founder—REMEDY.—Draw about 1 gal. of blood from the neck; then drench the horse with linseed-oil 1 qt.; now rub the fore legs, long and well, with water as hot as can be borne without scalding.

This remedy entirely cured a horse which had been foundered on wheat, two days before the treatment began.

Physic—BALL FOR HORSES.—Barbadoes aloes from 4 to 5, or 6 drs. (according to the size and strength of the horse); tartrate of potassia 1 dr.; ginger and castile soap, of each 2 drs.; oil of aniseed or peppermint 20 drops; pulverize, and make all into one ball with thick gum solution.

Before giving a horse physic, he should be prepared for it by feeding scalded bran, in place of oats, for two

days at least, giving also water which has the chill taken off, and continue this feed and drink, during its operation. If it should not operate in forty-eight hours, repeat half the dose.

2. PHYSIC FOR CATTLE.—For Cattle, take *half* only of the dose above for a horse, and add to it glauber salts 8 ozs.; dissolve all in gruel 1 quart, and give as a drench; for cattle are not easily managed in giving balls, neither is their construction adapted to dry medicine.

There is not the need of preparation for cattle, generally, as for horses, from the fact of their not being kept up to grain, if they are, however, let the same precautions be observed as in "Physic Ball for Horses."

Hoof-Ail in Sheep—SURE REMEDY.—Muriatic acid and butter of antimony, of each 2 oz.; white vitriol, pulverized, 1 oz. Mix.

DIRECTIONS.—Lift the foot and drop a little of it upon the bottom. It will need to be applied only once or twice a week—as often only as they limp, which shows that the foot is becoming tender again. It kills the old hoof, and a new one soon takes its place. Have no fears about the result; apply the medicine as often as indicated, and all is safe.

It has proved valuable in growing off horse's hoofs, when snagged, or contraction made it necessary.

Eye Water—FOR HORSES AND CATTLE.—Alcohol 1 table-spoonful; extract of lead 1 tea-spoonful; rain water $\frac{1}{2}$ pt.

Wash the eye freely, two or three times daily. But I prefer the "Eye Water" as prepared for persons; and allow me here to say that what is good for man, in the line of medicine, is good for a horse, by increasing the dose to correspond.

Good Samaritan Liniment—IMPROVED.—Take 98 per cent. alcohol 2 qts., and add to it the following articles: oils of sassafras, hemlock, spirits of turpentine, tinctures of cayenne, catechu, guaiacum (guac), and laudanum, of each 1 oz.; tincture of myrrh 4 oz.; oil of origanum 2 ozs.; oil of wintergreen $\frac{1}{2}$ oz.; gum camphor 2 ozs.; and chloroform $1\frac{1}{2}$ ozs.

I have used the above liniment over five years, and cannot speak too highly of its value; I have cured myself of two severe attacks of rheumatism with it, the first in the knee, and the last in the shoulder, three years after; my wife has cured two corns on the toes with it, by wetting them twice daily for a few days; and it is hard to think of anything which it has not cured, such as sprains, bruises, cuts, jams, rheumatism, weak back, reducing swellings, curing leg-ache in children from over-playing, for *horse-flesh*, etc., etc. But you will allow me one remark about liniments—they ought in all cases to be put on and rubbed in from twenty to thirty minutes, and laying the hand on the part until it burns from its effects, instead of one or two minutes, as is the usual custom; and if made by the quart, you can use them freely, as the cost is not more than about one-eighth as much as to purchase the two shilling bottles. Wetting flannel with the liniment, and binding on, is a good manner of application. Dr. Hale, of New York,

has adopted this liniment for general use; but for headache and neuralgia, he takes eight ounces of it and adds an ounce of chloroform, and half an ounce of oil of wintergreen, rubbing upon the head, holding to the nostrils, etc.

Taming—PRINCIPLES APPLIED TO WILD AND VICIOUS HORSES.—I have thought, in closing up this Department, that I could not devote a page to a better purpose than to the so-called *secret* of taming. For it is a secret, but it lies in a different point from what is *generally* believed, which I will attempt to show.

Several persons are advertising books for taming wild horses, and other persons are going about teaching the art to classes in private. Probably the pupils get their money's worth. But, why do so many fail? *The whole secret lies in this, that many persons can never handle a horse, with all the instruction in the world—it is not in them.* They cannot establish a sympathy between themselves and the horse, and if they become horse trainers, they have only mistaken their calling, and the money they laid out is perhaps as cheap a way as they could be taught their mistake.

To be a *successful* horse trainer, he must have a *sympathy* with the horse, and a *personal* power of control. This reminds us of an old gentleman's remarks on the subject of sweeny. He said: "There were a great many recipes of penetrating oils, applications, etc., but the great secret was in *faith*," without which no person will persevere a sufficient length of time with either of them. This holds good in all diseases, as well as in handling or taming a horse.

The mystery or secret, then, is in *knowing* how, and having the *stamina* (power) to do it.

As for receipts, they consist in using the horse-castor or wart, which grows upon the inside of the leg, grated fine, oil of cumin, and oil of rhodium, kept separate in air-tight bottles; these all possess peculiar properties for attracting and subduing animals.

Rub a little oil of cumin upon your hand, and approach the horse in the field, on the windward side, so that he can smell the cumin. The horse will let you come up to him without trouble.

“Immediately rub your hand gently on the horse’s nose, getting a little of the oil on it. You can then lead him any where. Give him a little of the castor on a piece of loaf-sugar, apple, or potato.

“Put eight drops of the oil of rhodium into a lady’s thimble. Take the thimble between the thumb and middle finger of your right hand, with the fore-finger stopping the mouth of the thimble to prevent the oil from running out whilst you are opening the mouth of the horse.

“As soon as you have opened the horses mouth, tip the thimble over upon his tongue, and he is your servant. He will follow you like a pet dog. Very doubtful.—AUTHOR.

“Ride fearless and promptly, with your knee pressed to the side of the horse, and your toes turned in and heels out; then you will always be on the alert for a shy or sheer from the horse, and he can never throw you.

"If you want to teach him to lie down, stand on his right or left side; have a couple of leather straps, about six feet long; string up his left leg with one of them around his neck; strap the other end of it over his shoulders; hold it in your hand, and when you are ready, tell him to lie down, and at the same time gently, firmly, and steadily pulling on the strap, touching him lightly with a switch. The horse will immediately lie down. Do this a few times, and you can make him lie down without the straps.

"He is now your pupil and friend. You can teach him anything, only be kind to him—be gentle. Love him and he will love you. Feed him before you do yourself. Shelter him well, groom him yourself, keep him clean, and at night always give him a good bed."

It will be perceived, by reference to the following item from *Bell's Life*, that the secret for taming horses, by which Mr. Rarey has made himself so rich and famous, instead of being a divination of his own, was probably obtained by him through some accidental contact with an old volume, which had long disappeared from observation, and hardly held a place in public libraries:

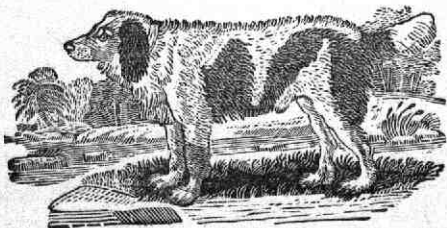
A correspondent sends us the following: "In the *Gentleman's Farriery*, by Bartlett, (sixth edition) published in 1762 (above one hundred years ago), page 293, is the following:

"The method proposed by Dr. Bracken is to tie up one of the fore feet close, and to fasten a cord or small rope about the other fetlock, bringing the end of

it over the horse's shoulders; then let him be hit or kicked with your foot behind that knee, at the same time pulling his nose down strongly to the manger. You will bring him upon his knees, where he should be held until he is tired, which cannot be long, but if he does not lie down soon, let him be thrust sideways against his quarters, to throw him over; by forcing him down several times in this way, you may teach him to lie down, at the same words you first used for that purpose." You will see that Mr. Rarey's system is exactly the same.

From the foregoing it will be seen that he obtained the knowledge, and naturally possessing the firmness, *fearless energy* and *muscle* sufficient to back the whole, he became *the horse tamer of the world*.

Without all these qualifications no one need under take the business, no matter how often he pays five dollars for recipes or instructions.



The Veterinary Pharmacopœia.

THE following *formulæ for veterinary practice* have been compiled from the works of the most eminent veterinary writers of the present day, as Blaine, Clark, Laurence, Peel, White, etc.; and we can from our own experience also, confidently recommend the selection to the notice of agriculturists, and the owners of horses in general. It would be prudent for such as have many horses, and particularly for such as live at a distance from the assistance of an able veterinarian, to keep the more necessary articles by them in case of emergency: some vendors of horse drugs keep veterinary medicine chests: and where the compositions can be depended on, and the uncompounded drugs are genuine and good, one of these is a most convenient appendage to every stable.

The veterinary pharmacopœia for oxen, calves, and sheep has been included in the arrangement. - Where any speciality occurs, or where distinct recipes are requisite, they have been carefully noticed; it will therefore only be necessary to be kept in mind, that with the exception of acrid substances, as mineral acids, etc., which no cattle can bear with equal impunity with the horse; the remedies prescribed require about the following proportions: A large ox will bear the proportions of a moderate sized horse; a moderate sized cow something less; a calf about a third of the quantity; and a sheep about a quarter, or at most a third of the proportions directed for a cow. It is also to be remarked, that the degrees in strength in the different recipes, are usually regulated by their numbers, the mildest standing first. Each Recipe is numbered and complete.

ALTERATIVES.

- 1—Levigated Antimony, two drachms.
Cream of Tartar,
Flour of Sulphur, each half an ounce.
 - 2—Cream of Tartar, Nitre, of each half an ounce.
 - 3—Æthiop's mineral, Levigated Antimony,
Powdered Resin, each three drachms,
- Give in a mash or in oats and bran, a little wetted, every night, or make into a ball with honey.

TONIC ALTERATIVES.

- 1—Gentian, Aloes, Ginger,
Blue Vitriol, in powder, of each one drachm,
Oak Bark in powder, six drachms.
 - 2—Winter's Bark in powder, three drachms,
Green Vitriol in powder, one and a half drachms,
Gentian in powder, three drachms.
- Make either of these into a ball with honey, and give every morning.
- 3—White Vitriol, one drachm,
Ginger or Pimento, ground, two drachms,
Powdered Quassia, half an ounce, Ale, eight ounces.
- Mix and give as a drink.
- 4—Arsenic 10 grains, Oatmeal 1 ounce.
- Mix and give in a mash, or moisten oats nightly.

ASTRINGENT MIXTURE FOR DIARRHŒA, LAX, OR SCOURING.

- 1—Powdered Ipecacuanha, 1 drachm,
Powdered Opium, half a drachm,
Prepared Chalk, 2 ounces, Boiled Starch, 1 pint.

- 2—Suet 4 ounces, boiled in Milk, 8 ounces,
Boiled Starch, 6 ounces, Powdered Alum, 1 drach.

The following has been very strongly recommended in some cases, for the lax of horses and cattle.

- 3—Glauber's Salts, 2 ounces, Epsom Salts, 1 ounce
Green Vitriol, 4 grains, Gruel, half a pint.

When the lax or scouring at all approaches to dysentery or molten grease, the following drink should be first given.

- 4—Castor Oil, 4 ounces,
Glauber's Salts, dissolved, 2 ounces,
Powdered Rhubarb, half a drachm,
Powdered Opium, 4 grains, Gruel, 1 pint.

ASTRINGENT BALLS FOR DIABETES OR PISSING EVIL.

Catechu [Japan earth], half an ounce,
Alum, powdered, half a drachm,
Sugar of Lead, 10 grains.
Conserve of Roses, to make a ball.

ASTRINGENT PASTE FOR THRUSH, FOOT-ROT, FOUL IN THE FOOT, ETC.

Prepared Calamine, Verdigris, of each half an ounce
White Vitriol, Alum, of each half a drachm,
Tar, 3 ounces. Mix.

ASTRINGENT WASHES FOR CRACKS IN THE HEELS, WOUNDS, ETC.

- 1—Sugar of Lead, 2 drachms, White Vitriol, 1 drach.
Strong infusion of Oak, or Elm Bark, 1 pint. Mix.

- 2—Green Vitriol, 1 drachm,
Infusion of Galls, half a pint.

Mix and wash the parts three times a day.

POWDER FOR CRACKS, ETC.

- 3—Prepared Calamine, 1 ounce,
Fuller's Earth, powdered,
Pipe Clay, powdered, of each 2 ounces.

Mix and put within gauze, and dab the moist surfaces of the sores frequently.

ASTRINGENT PASTE FOR GREASE.

- 1—Prepared Calamine,
Tutty, powdered,
Charcoal, powdered, of each 2 ounces,
Yeast enough to make a paste.
- 2—To the above, if more strength be required, add of Alum and Verdigris each a drachm.

ASTRINGENT WASH FOR GREASE.

- 3—Corrosive Sublimate, 2 drachms,
Spirit of Wine or Brandy, 1 ounce,
Soft Water, 10 ounces.

Rub the Sublimate in a mortar with the spirit till dissolved, then add the water. This is a strong preparation and has often proved successful in very bad cases of grease, which have resisted all the usual remedies.

BLISTERS. 1.—A general one.

- Cantharides, powdered, 2 ounces,
Venice Turpentine, 2 ounces,
Resin, 2 ounces, Palm Oil or Lard, 2 lbs.

Melt the three latter articles, together, and when not too hot stir in the Spanish Flies.

2.—A STRONG, CHEAP BLISTER, BUT NOT PROPER TO BE USED IN FEVERS OR INFLAMMATIONS, AS OF THE LUNGS, BOWELS, ETC.

Euphorbium, powdered, 1 ounce,
 Oil of Vitriol, 2 scruples,
 Spanish Flies, 6 ounces, Palm Oil or Lard,
 Resin, of each 1 pound, Oil of Turpentine 3 ounces

Melt the Resin with the Lard or Palm Oil. Having previously mixed the Oil of Vitriol with an ounce of the water gradually, as gradually add this mixture to the melted mass; which again set on a very slow fire for ten minutes more: afterwards remove the whole, and when beginning to cool, add the powders previously mixed together.

3.—A MERCURIAL BLISTER, FOR SPLINTS, SPAVINS, AND RING-BONES.

Of either of the above 4 ounces,
 Corrosive Sublimate finely powdered, half a drachm.

4—STRONG LIQUID BLISTER

Spanish Flies, in gross powder 1 ounce,
 Oil of Origanum, 2 drachms,
 Oil of Turpentine, 4 ounces. Olive Oil, 2 ounces.

Steep the Flies in the Turpentine three weeks, strain off and add the oil.

5—MILD LIQUID OR SWEATING BLISTER.

Of the above one ounce,
 Olive Oil or Goose-grease, one and a half ounces.

CLYSTERS 1.—A Laxative one.

Thin Gruel or Broth, 5 quarts,
 Epsom or Common Salts, 6 ounces.

2—CLYSTER FOR GRIPES.

Mash two moderate sized Onions,
 Pour over them Oil of Turpentine, 2 ounces,
 Capsicum or Pepper, half an ounce,
 Thin Gruel, 4 quarts.

3—NUTRITIOUS CLYSTER.

Thick Gruel, 3 quarts, Strong sound Ale, 1 quart.

Or 4.—Strong Broth, 2 quarts,
 Thickened Milk, 2 quarts.

5—ASTRINGENT CLYSTER.

Tripe Liquor or Suet boiled in Milk, 3 pints,
 Thick Starch, 2 pints, Laudanum, half an ounce.

Or 6.—Alum Whey, 1 quart, Boiled Starch, 2 quarts.

CORDIAL BALLS.

Genetian powdered, 4 ounces,
 Ginger powdered, 2 ounces,
 Coriander Seeds powdered, 4 ounces,
 Caraway Seeds, 4 ounces,
 Oil of Aniseed, quarter of an ounce.

Make into a mass with Honey, Treacle, or Lard,
 and give an ounce and a half for a dose.

CHRONIC COUGH BALLS.

Calomel 1 scruple, Gum Ammoniacum,
 Horse-radish, of each 2 drachms, Balsam of Tolu,
 Squills, of each 1 drachm.

Beat all together, and make into a ball with Honey,
 and give every morning fasting.

2—DRINK FOR THE SAME.

Tar Water, Lime Water, of each half a pint,
Tincture of Squills, half an ounce.

3—POWDER FOR THE SAME.

Tartar Emetic, 2 drachms,
Powdered Foxglove, half a drachm,
Powdered Squill, half a drachm,
Calomel, 1 scruple, Nitre, 3 drachms.

Give every night in a malt mash.

DIURETIC BALLS.

Resin, yellow, 1 pound, Nitre, half a pound,
Horse Turpentine, half a pound,
Yellow Soap, quarter of a pound.

Melt the Resin, Soap, and Turpentine over a slow fire; when cooling add the Nitre. For a strong dose, an ounce and a half, for a mild one an ounce. It should be kept in mind, *that mild diuretics are always equal to what is required*: and that strong diuretics are always hurtful.

DIURETIC POWDERS.

Yellow Resin, Powdered, 4 ounces,
Nitre, powdered, 8 ounces,
Cream of Tartar, powdered, 4 ounces.

Dose—6, 8, or 10 drs. nightly, which some horses will readily eat in a mash.

URINE DRINK.

Glauber's Salts, 2 ounces. Nitre, 6 drachms.

Dissolve in a pint of warm water.

1—EMBROCATIONS—COOLING FOR INFLAMMATIONS

Goulard's Extract, half an ounce,
Spirits of Wine or Brandy, 1 ounce,
Soft Water, 1 quart.

2—Mindererus Spirit, 4 ounces, Water, 12 ounces.

FOR SPRAINS.

Bay Salt, bruised, half a pound,
Crude Sal Ammoniac, 2 ounces,
Sugar of Lead, quarter of an ounce,
Vinegar, 1 pint and a half, Water, 1 pint.

1—FOR THE EYES.

Sugar of Lead, 1 drachm, White Vitriol, 2 scruples,
Water, 1 pint.

2—Brandy, 1 ounce, Infusion of Green Tea, 4 ounces,
Tincture of Opium, 2 drachms,
Infusion of Red Roses, 4 ounces.

3—Rose Water, 6 ounces,
Mindererus Spirit, 3 ounces.

4—Corrosive Sublimate, 4 grains, Alcohol, 1 ounce,
Lime Water, 1 pint.

5—Alum, powdered, 1 drachm,
Calomel, half a drachm.

Mix and insert a little at one corner of the eye
The custom of blowing it in alarms the horse.

1—FEVER POWDERS.

Tartar Emetic, 2 drachms, Nitre, 5 drachms.

2—Antimonial powder 2 drachms,
Cream of Tartar, Nitre, of each 4 drachms,

3--FEVER DRINK.

Sweet Spirit of Nitre, 1 ounce,
Mindererus Spirit, 6 ounces, Water, 4 ounces.

4--EPIDEMIC FEVER DRINK.

Sweet Spirit of Nitre, 1 ounce,
Simple Oxymel, 6 ounces,
Tartar Emetic, 3 drachms.

5--MALIGNANT EPIDEMIC FEVER.

Simple Oxymel, Mindererus Spirits,
Beer Yeast, of each 4 ounces,
Sweet Spirit of Nitre, 1 ounce.

FUMIGATIONS FOR PURIFYING INFECTED STABLES,
SHEDS, ETC.

Manganese, 2 ounces, Common Salt, 2 ounces,
Oil of Vitriol, 3 ounces, Water, 1 ounce.

Put the mixed Manganese and Salt into a basin; then, having before mixed the Vitriol and Water very gradually, pour them by means of tongs, or any thing that will enable you to stand at a sufficient distance, on the articles in the basin gradually. As soon as the fumes rise, retire and shut up the door close. Carbolic Acid is now used as a disinfectant.

HOOF LIQUID.

Oil of Turpentine, 4 ounces,
Tar, 4 ounces, Whale Oil, 8 ounces.

This softens and toughens the hoofs extremely, when brushed over them night and morning.

PURGING MEDICINES.

Balls—very mild.

Aloes, powdered, 6 drachms,
Oil of Turpentine, 1 drachm.

Mild. — Aloes, powdered, 8 drachms,
Oil of Turpentine, 1 drachm

Strong. — Aloes, powdered, 10 drachms,
Oil of Turpentine, 1 drachm.

The Aloes may be beaten with Treacle to a mass adding, during the beating the Oil of Turpentine. All Spices, Cream of Tartar, Jalap, etc., are useless, and often hurtful additions.

LIQUID PURGE.

Epsom Salts, dissolved, 8 ounces,
Castor Oil, 4 ounces,
Watery Tincture of Aloes, 8 ounces,

Mix.—The Watery Tincture of Aloes is made by beating powdered Aloes with the yolk of egg, adding water by degrees, by these means half an ounce of Aloes may be suspended in 8 ounces of water, and such a purge is useful when a ball cannot be got down, as in partial locked jaw.

SCALDING MIXTURE FOR POLL-EVIL.

Corrosive Sublimate, finely powdered, 1 drachm,
Yellow Basilicon, 4 ounces.

FOOT STOPPINGS.

Horse and Cow dung, each about 2 lbs.
Tar, half a pound.

WASH FOR CORING OUT, DESTROYING FUNGUS, OR
PROUD FLESH, ETC., ETC.

Lunar Caustic, 1 drachm, Water, 2 ounces.

WASH FOR MANGE

Corrosive Sublimate, 2 drachms,
Spirits of Wine or Brandy, 1 ounce,
Decoction of Tobacco,
Decoction of White Helebore, of each 1 pint.

Dissolve the Mercury in the spirits, and then add the decoctions.

1—OINTMENT FOR HEALING.

White Vitriol, powdered, half a drachm,
Turner's Cerate, 2 ounces, Lard, 4 ounces.

2—FOR DIGESTING.

Turner's Cerate, 2 ounces, White Vitriol, 1 drach.
Yellow Basilicon, 5 ounces.

FOR MANGE.

Sulphur Vivum, 8 ounces,
Arsenic in powder, 2 drachms,
Mercurial Ointment, 2 ounces,
Turpentine, 2 ounces, Lard, 8 ounces.

Mix, and dress with every morning.

FOR SCAB OR SHAB IN SHEEP, MALLENDERS AND
SELLENDERS IN HORSES, AND FOUL BLOTCHES AND
ERUPTIONS IN CATTLE IN GENERAL.

Camphor, 1 drachm, Sugar of Lead, half a drach.
Mercurial Ointment, 1 ounce.

CAUTION:—*Always keep your Bottles and Powders
labelled with the proper names on them, this may save life.*