

*Our Friend
the Horse*

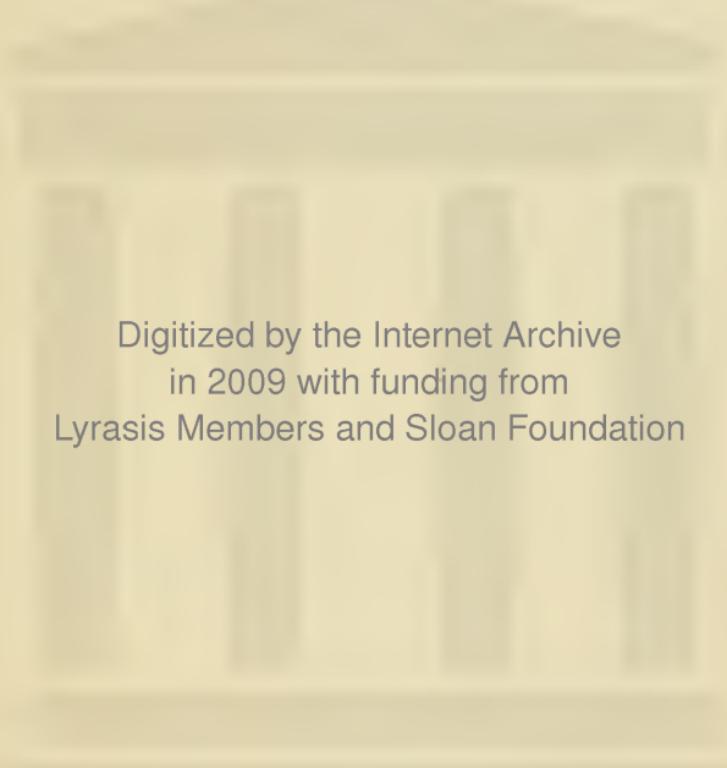
FRANK TOWNEND BARTON, M.R.C.V.S.

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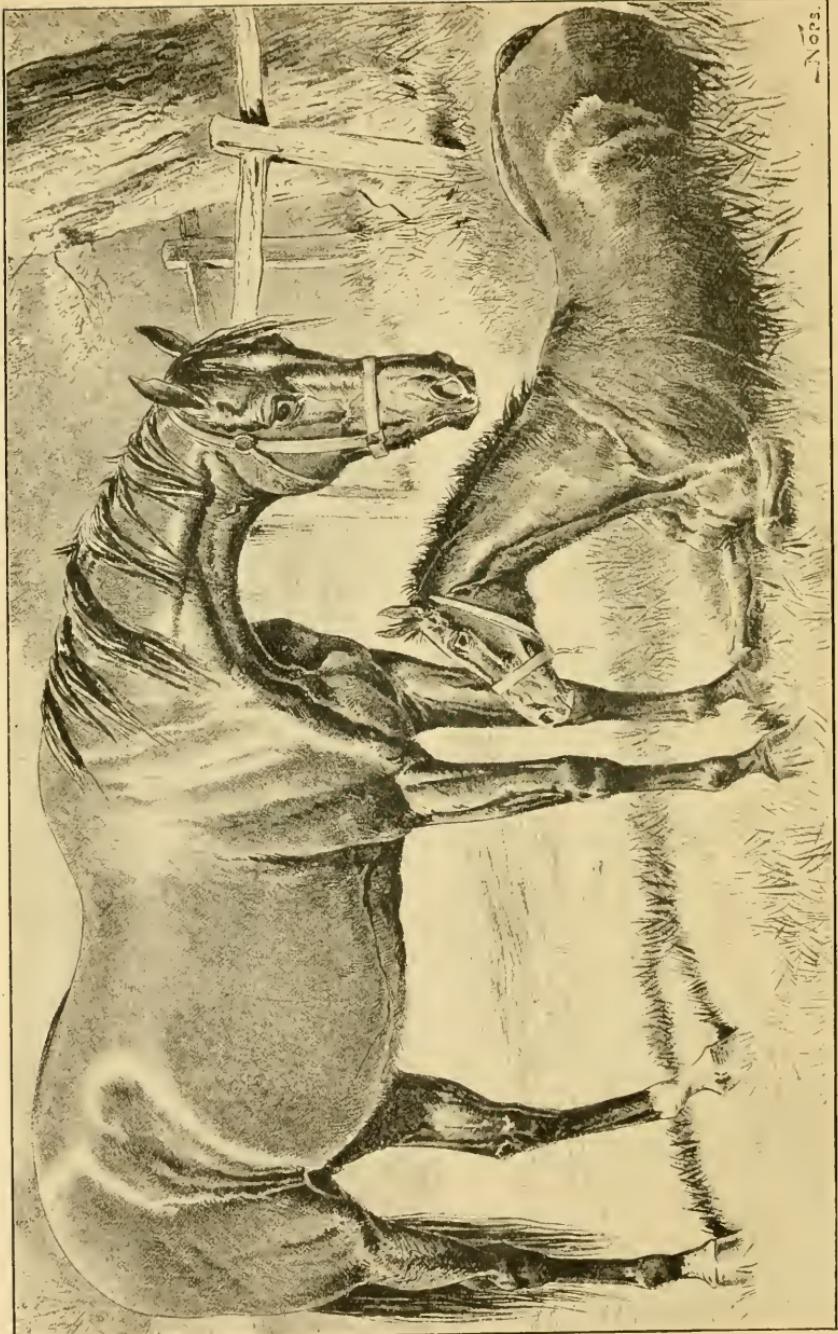


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OUR FRIEND THE HORSE



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MARE AND FOAL. *From a picture by J. Sturgess.*

OUR FRIEND

THE HORSE.

A COMPLETE PRACTICAL GUIDE

TO ALL THAT IS KNOWN ABOUT

EVERY BREED OF HORSE IN THE WORLD.



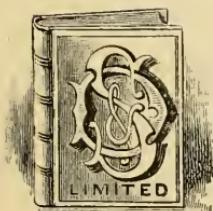
BY

FRANK TOWNEND BARTON, F.Z.S., M.R.C.V.S.,

Author of "Unsound Horses and how to know them"; "Every-day Ailments and Accidents of Cattle"; "The Age of the Horse and how to tell it"; "Diseases of Poultry"; "Diseases of the Dog," etc., etc.



Illustrated.



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P R E F A C E

THE Author, in presenting this work to his readers, has endeavoured to place the information contained herein, in a clear, brief, and systematic style, so that the Manual may be found a useful guide to the breeders, owners, and others interested in matters pertaining to the Horse, either for pleasure or profit.

An important section of the work is that devoted to the various breeds, especially those varieties which more immediately concern his fellow-countrymen, whilst the importance of foreign breeds has not altogether been overlooked.

It is a well-known fact that the care given to a horse, whatever be its particular service to man, is a most important factor in determining its subsequent utility, and it is with this aim that the writer has been induced to give the more important facts relating to foods, feeding, and stable management in general.

The most important diseases and accidents incidental to the Horse have been arranged alphabetically, so that the demands for urgent reference, when needed, may be satisfied.

To conclude, the Publishers and Author alike, in launching forth *Our Friend the Horse*, trust that the subject of the book will ever continue to bear out the significance of the title,

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OUR FRIEND THE HORSE

CHAPTER I

THE CLYDESDALE HORSE

EXACTLY in the same way that we come to regard the Shire Horse as a distinct breed, so must an equal claim be laid for the Clydesdale, whose interests are carefully watched over by the Clydesdale Horse Society, founded during the year 1877, the Secretary of which is Mr. Archibald MacNeilage, 93, Hope Street, Glasgow.

Regarding the origin of the breed, two theories are propounded, viz.—(1) That Flemish stallions were the sires, and native Scotch mares the dams. (2) That it is the outcome of special selection by the Clyde Valley farmers.

One thing, about which no doubt exists, is that the Clydesdale Horse breeding-ground was centred around Lanark, at which fair the selling and purchasing of colts, fillies, etc., was largely carried on.

The introduction of Flemish blood seems to have had an important bearing upon the building up of the conformation and constitutional stamina of the breed. These horses were put to mares belonging to one John Paterson of Lochyloch—the stock of which died out some thirty years since, we are told. The mares were either

black or brown, and had a patch of white hair on the belly.

The best and most celebrated Clydesdales of the present day appear to be descendants of the famous "Black Horse" (Thompson's).

Conformation.—Eyes full, and free from vicious expression; forehead broad and tapering; ears long; open nostrils and broad jaws. The whole expression of the face should indicate courage and mildness of temper. A vicious expression is objectionable in the Clyde—in fact in any horse.

The neck must be of moderate length, massive, yet of graceful contour; shoulders decidedly oblique; chest broad and full; back rather short and hollow, but clothed with powerful muscles. A long back is a defect.

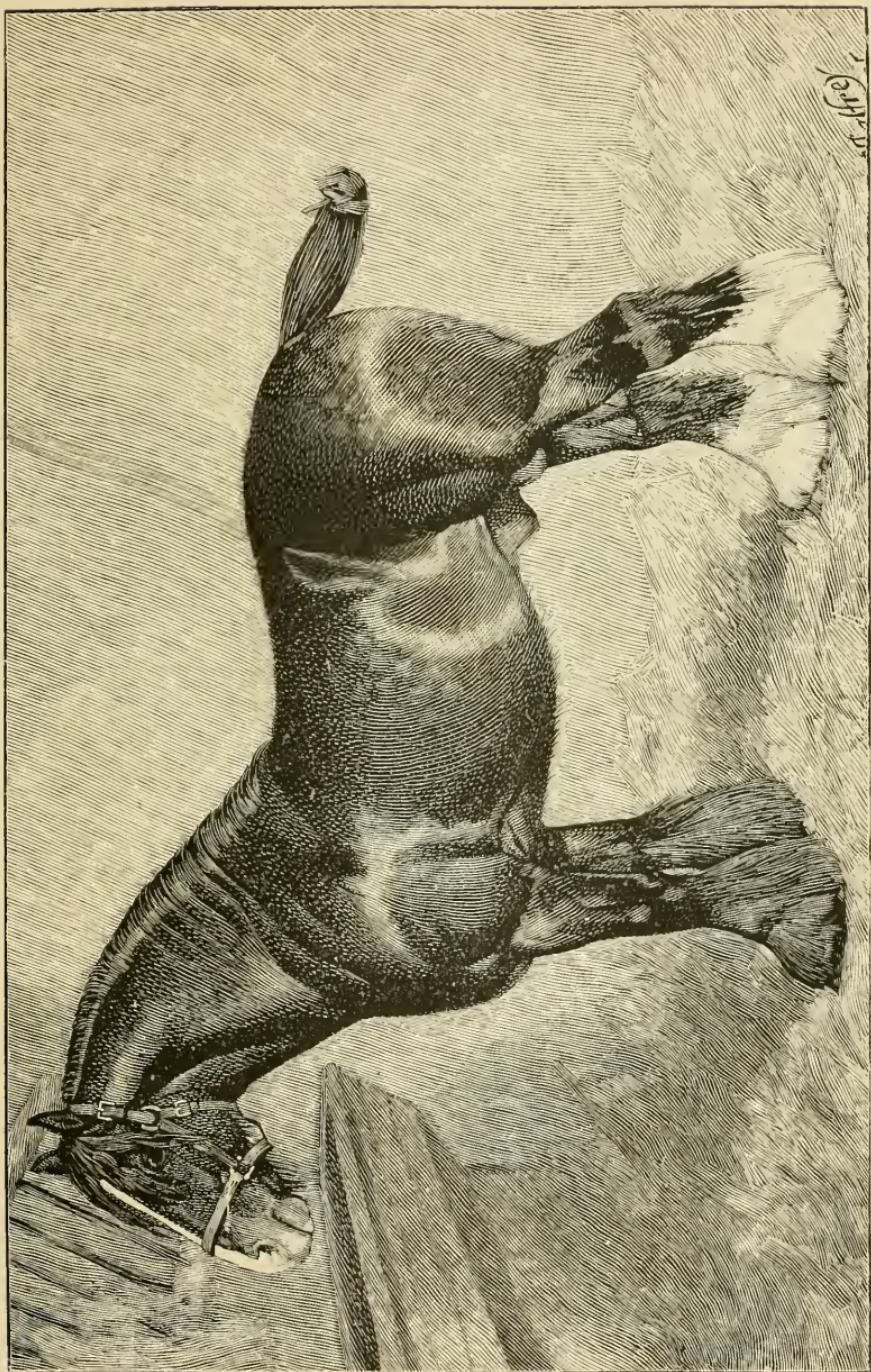
The fore-limbs must be well placed on the trunk, whilst the knees are flat, broad, and strong-looking. Below the knee (cannon-bone) there should be plenty of breadth for the fore-quarters to rest upon. A horse that shows weakness in this region may be prevented from getting a high place at an exhibition.

There must be no appearance of a sluggish or loose condition of the skin or tendons—clean legs. There ought to be plenty of feather—long "silky" (not coarse) hair, below the knees.

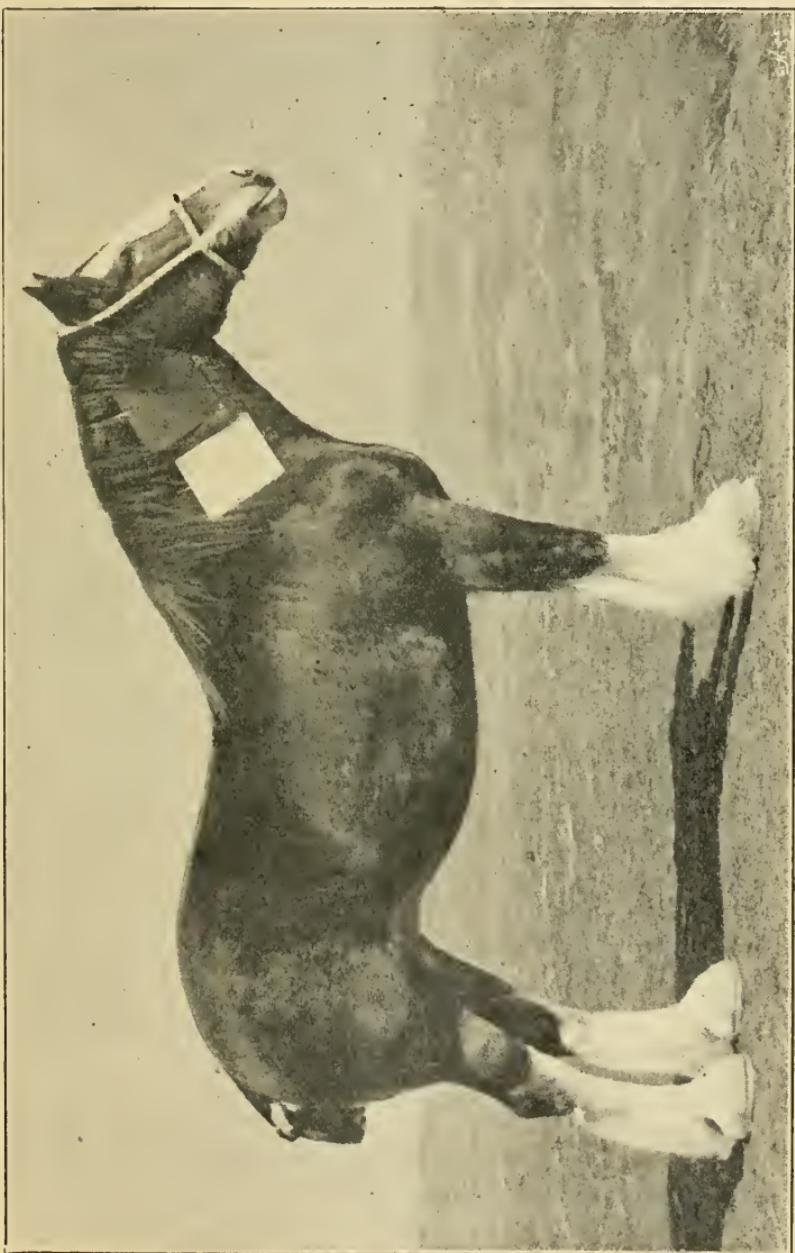
The pasterns should have a nice slope, and be of medium length. Avoid a horse with the least inclination towards upright (vertical) pasterns. We should condemn any horse straight away with such an objectionable defect as the one just named.

What about the feet, eh? Why, one of the most important points in every breed of horse, and in none more so than in the Clydesdale. The feet ought to be broad in front and free from the least narrowing behind.

St. [re] f.



CLYDESDALE STALLION.



From a photograph by Charles Reid, Wishaw, N.B.

CLYDESDALE MARE.

B

There must be neither side-bone nor ring-bone. The horn free from brittleness, cracks, or dryness. The foot-pad (frog) must be large, springy, and resting on the ground.

Small feet should, in our opinion, put any horse out of count, either for show or stud purposes.

In plain English, the feet must be *symmetrical, strong, and free from disease*.

Tail, well set on ; quarters, low-set and powerful ; thighs, thickly clad with muscle.

The hinder quarters, taken as a whole, should be expressive of strength and endurance.

The hock-joints, free from spavin or other disease, and strong, but not the so-called fleshy hock. Long, silky hair from here to the ground. Below hocks, there must be strength without waste of material (economy).

Height.—16 h. 2 in. ; more rarely, 17 hands. It is uncommon to find Clydes much above this ; if so, they are inclined to be gawky.

Colour.—A dark-brown, and if there is a dappling in this, so much the better. Black is a useful colour.

Grey mares are fashionable, but not entire. This is a good wearing colour for heavy draught purposes.

Chestnut and roan cannot be favourably regarded. There is a certain amount of antipathy against these colours, at any rate so far as stallions are concerned.

White on one or more of the legs is considered favourable, though we have known it objected to.

The so-called “ratch” upon the face is considered a beauty-spot, and a signal of purity of blood.

Action.—(1) *At the Walk.*—A quick, deliberate step. There must be no shuffling business about the feet. Sharp hock and knee action. A horse that drags its hind-limbs is distinctly objectionable.

There ought to be perfect freedom from turning "in," or turning "out," of the toes.

Crossing the feet is a most objectionable defect.

The writer believes in paying the greatest attention to action, because some (otherwise very good horses) are defective in this respect.

(2) *During the Trot*.—Free knee and hock action; but no spreading of limbs.

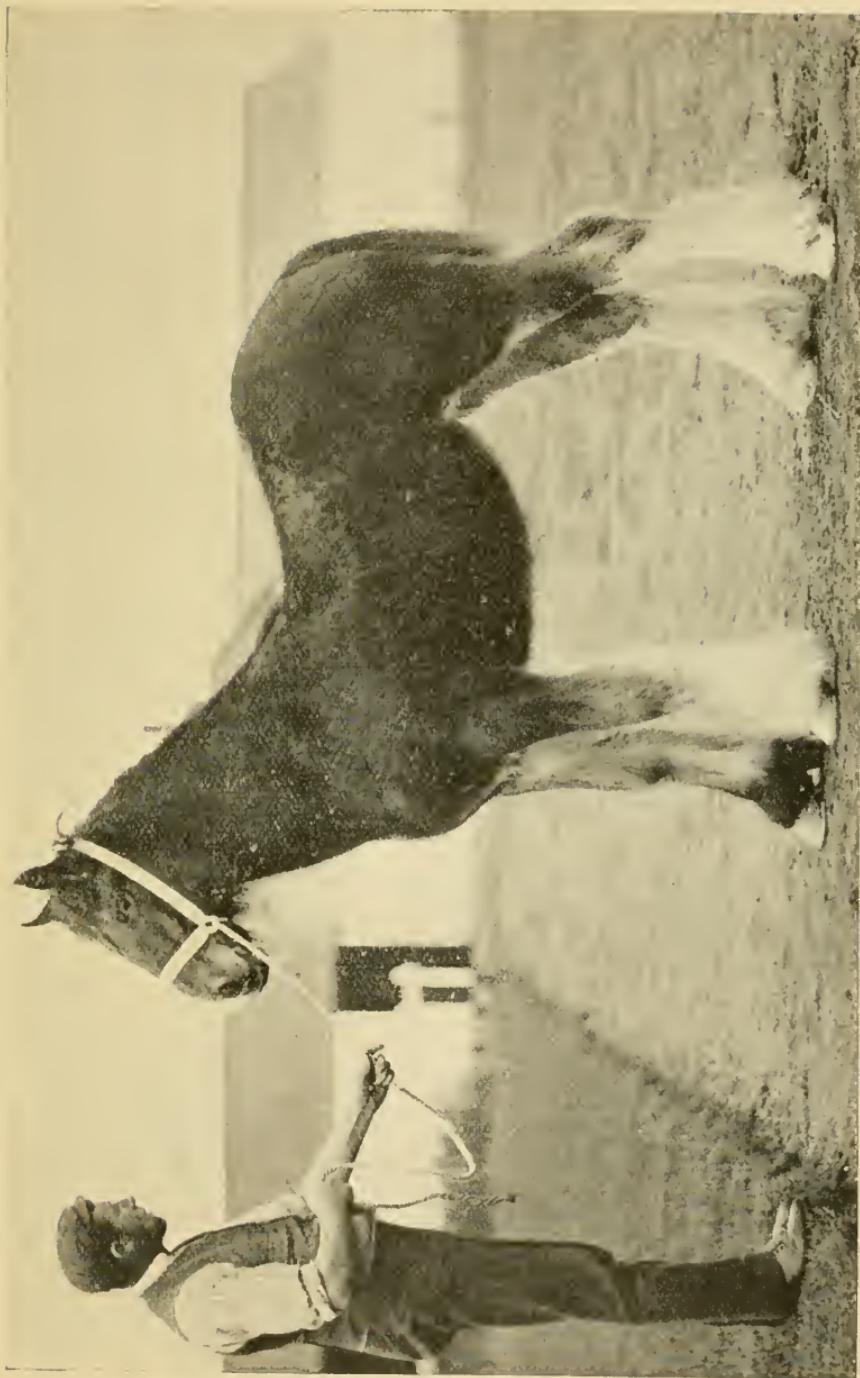
Toes neither in nor out.

Lastly, freedom from the least respiratory disturbance when the horse is put to severe exertion.

Age.—Perfection at 6 years.

Our illustrations represent a typical Clydesdale stallion, mare, and filly.

CLYDESDALE FILLY.



CHAPTER II

THE SHIRE HORSE

JUST as the Clydesdale Horse represents the heaviest breed of animal in Scotland, so may the same be said of the Shire Horse in England. Both the Clydesdale and Shire are specially adapted for the purposes of heavy draught, and we believe that these national representatives of equine life frequently cause a conflict of opinion as to their respective merits. We think that there should be a little "give" and "take" when discussing the individual merits of these monarchs of strength. So far as the Author is concerned, this is a matter of indifference.

Since the foundation of the Shire Horse and Clydesdale Horse Societies, the purity of the breed has been preserved, and their Secretaries deserve praise for their efforts in connection therewith. The Shire Horse Society was founded in 1878, publishing annually one volume of its Stud-book in which the pedigrees of Shires are registered. Since this Society started, the number of horses registered has steadily increased. The same may be said of its members.

History of the Breed.—Thousands of years ago there existed in our island a heavy variety of horse known as the "Great Horse." During these early times the horse was not employed for agricultural work or other heavy

draught haulage, its place being taken by working oxen. The terms "war" horse and "great" horse were employed synonymously in the past.

Parliamentary Acts were passed during the reigns of Edward III., Richard II., and Henry VII., for the purpose of maintaining, and improving, the size and build of heavy horses.

Again, the importation of large stallions from Flanders and Holland, etc., was indulged in for the same purposes. Doubtless, some will argue that the mere fact of these horses having been imported for stud purposes, goes to show that the Shire horse is not a distinct breed. If this argument be persisted in, it will hold good in the case of almost every variety of horse.

It is by the selection and mating together, through successive generations, of these heavy draught animals, that the Shire horse of to-day lays its claim to the distinctive title. The registration of pedigrees, in our day, has the same object in view.

During the year 1755, a Shire stallion, known as the "Packington Blind Horse," came into public notice. This horse is said to have been of a black colour, powerful in build, and about 16½ hands in height.

One Bakewell appears to have been an earnest breeder of the old Shire horse. Most of these animals were dark or black-coloured.

Conformation.—Eyes bright, but expressive of mildness; neck short and powerful; body massive; flanks short; loins clothed with highly-developed muscles.

The quarters must be long, and impressive of exceeding power.

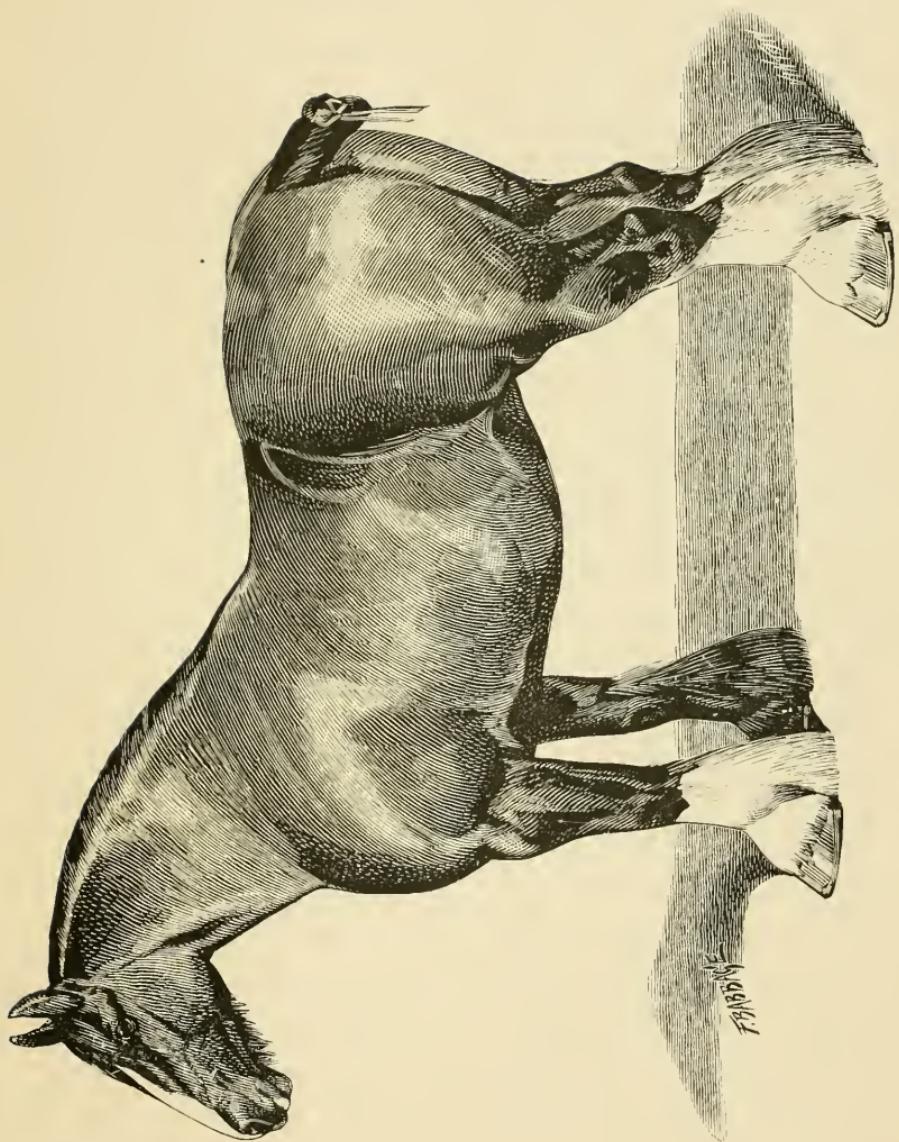
The limbs should be short, solid, large and broad, yet "clean" without.

It is this shortness of limbs, round, heavy, and compact

SHIRE STALLION.



SHIRE
STALLION



SHIRE MARE.

body, along with the silky hairs on the legs, which serves to distinguish the Shire from the Clydesdale.

In plain English, the Shire horse must be long, low, broad, and have a powerfully-developed muscular system.

Girth, 7 ft. 9 in. to 8 ft. 6 in.

Good feet are of course a *sine qua non*—an important point to be attended to when judging Shires, or, in fact any horses.

Limbs, short from knee to fetlock.

Short, well-sloped, broad pasterns are important.

In action, the step should be quick and sure, whilst the trot—if put to it—ought to be free and easy.

As a rule, mares are less powerfully built than stallions, and not so compact.

Height.—With reference to height, the animal should not exceed 17 hands. If much above this it becomes ungainly in appearance, and faulty in action.

Colour.—Varies. Dark-grey, brown, and chestnut-black are common amongst exhibition specimens. Black and bay colours are frequent.

Our illustrations show a Shire stallion and mare.

Uses.—For all kinds of heavy draught work.

When breeding from the Shire horse and mare, special attention must be paid in selection, otherwise the progeny may be affected with some damaging inheritance.

CHAPTER III

THE SUFFOLK HORSE

THE Suffolk Horse is as distinct in type as the Clydesdale and Shire—indeed, it appears to have been a distinct variety of horse several generations ago, being well known under the title of the *Suffolk Punches*. In the present day the Suffolk Horse Society has done good work to preserve the purity of this ancient breed. The same may be said of the Royal Agricultural Society of England. The foundation of a Stud-book for any particular breed of animal is always a step towards the maintenance of excellency, and enables admirers of the breed to steer clear of improper selection.

The Suffolk Stud-book,¹ published by the above Society, serves these purposes. Although the demand for Suffolk horses is very small compared with that of the Clydesdale and Shire, there is even a difficulty often experienced in obtaining a good pair of these horses.

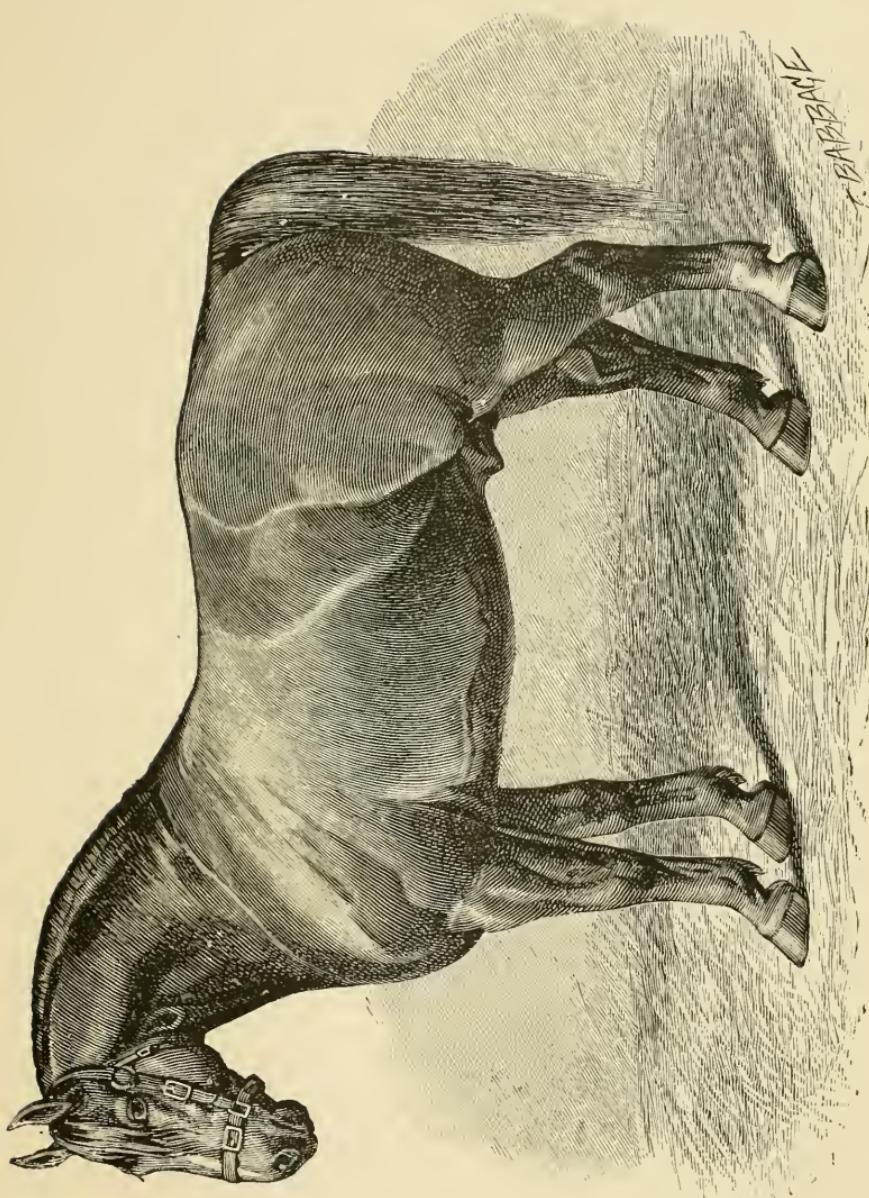
For the medium work of a brewery, we believe that this breed of horse is particularly suitable.

For activity, courage, and pulling power combined, the Suffolk cannot be excelled.

Clean legs and well-formed shoulders are typical of the Suffolk horse, hence the reason why these animals are very free and easy movers.

Conformation.—Legs clean and hard, *i. e.* free from

¹ The Suffolk Stud-book Association was formed in June 1877.



SUFFOLK STALLION.

a superabundance of connective tissue beneath the skin; back tendons of fore-limbs distinctly felt, with a slight hollow between the tendons and bone.

Neck, short and thick below, ending in powerful and deep shoulders.

Fore-arms short, but very muscular.

Pasterns short and strong, free from long hair.

Barrel round, though body light as compared with the powerful fore-quarters.

The hair of the forelock is wavy.

Height.—For stallions, $15\frac{3}{4}$ to $16\frac{1}{2}$ hands.

Weight.—1,900 up to 2,240 lbs.

Colour.—The typical colour for a Suffolk horse is chestnut, though the shade of this varies considerably. It may be golden, red, pale-yellow, or dark-chestnut. The last-named colour is finding favour with some Suffolk breeders at the present time. Provided that the horse has not too much white hair about it, there is little fear of getting a Suffolk with a lymphatic (sluggish) temperament.

Uses.—For quick heavy draught work. Equally good at the plough and between the shafts.

As a sire for getting weight-carrying hunters, he is not a bad mate, if put to a blood mare.

Our illustration represents a Suffolk Entire.

THE CLEVELAND BAY

From the foundation of the Cleveland Bay Horse Society, this variety of horse has maintained its position as an animal of many excellent qualities. It is about one hundred years since it came to be recognised as a breed of horse indigenous to the north of Yorkshire and south of Durham. Was formerly termed the "Chapman," or "Pack Horse."

Conformation, etc.—Loins, powerful and muscular; quarters are specially worthy of notice, these being of beautiful contour, which, along with the carriage of the tail, enables one to recognise (without much equine knowledge) the Cleveland Bay horse. His head is well carried, and the shoulders indicative of power.

Limbs strong; joints broad and well formed.

Legs clean, and back tendons of fore-limbs very strong and plainly seen.

Action free, but not excessive.

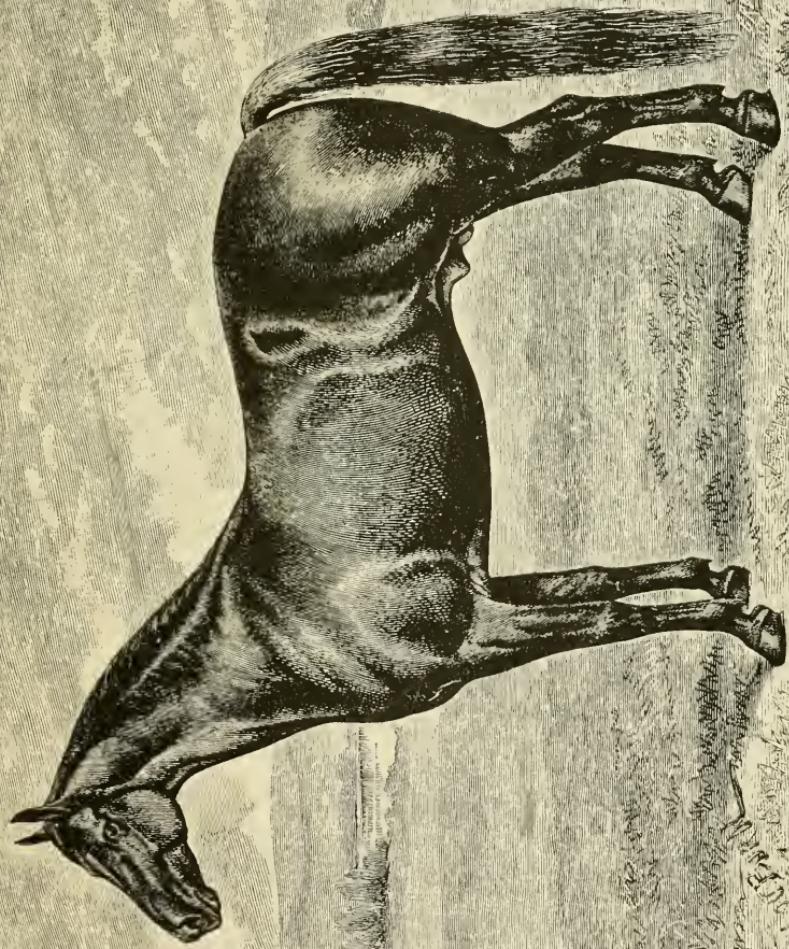
Height.—16 to 16·2 hands.

Colour.—Bay (light or dark), with black limbs. White on the latter denotes impurity of breed.

Uses.—For light work of the farm.

During the middle and latter parts, as well as the beginning of the present century, the agricultural work in the vale of Cleveland was performed by this breed of horse. Cleveland mares are frequently used for the purpose of breeding weight-carrying hunters. As a sire, a thoroughbred can be used. Good harness horses can be bred after this fashion.

An excellent cross would be that of a Cleveland mare with a Hackney stallion.



CLEVELAND BAY STALLION.

THE YORKSHIRE COACH-HORSE

This, the Yorkshire Coach-horse, appears to be a variety resembling, in some features at least, the Cleveland Bay of times gone by, indeed, the best coach-horses are crossed with this. The Yorkshire Coach-Horse Society was established during the year 1886; from which date this particular type of horse has had its interests carefully guarded—the aim of the Stud-book.

Conformation.—Sloping shoulders; strong loins; flat legs and good sound feet are very important. Plenty of hair on mane and tail, lengthy quarters, good and moderately high action, head smaller than the Cleveland Bay, and crest well arched, are the remaining points of beauty.

Height.—16 to 16·1½, or 16·2 hands.

Colour.—Bay or brown; black limbs.

Uses.—Coaching work.

CHAPTER IV

THE HUNTER

PROBABLY the thoroughbred horse makes the best Hunter, provided that the total weight carried does not exceed *thirteen stone*.

Many are of the opinion that the so-called half-breeds make the best animals for hunting purposes. In our opinion, this statement does not hold good, unless the rider's weight forbids the use of the blood-horse.

It is quite possible that weight-carrying bloods can be bred.

Formerly the best Hunters came from the Emerald Isle, though we think that the introduction of heavy draught mares has not improved the Irish hunter.

Conformation.—Neck long and high, but never arched, withers prominent; loins muscular; chest high; croup and thighs powerful. Hocks and quarters must be suggestive of propelling power, whilst his back requires to be equal to the weight the animal has to carry.

Endurance, courage, and a sweet temper are of paramount importance.

The heavier the weight to be carried, the greater the breadth of the horse needed, though less in length. It is usual to speak of these animals as "light"- and "heavy-weight" carriers.

So far as external appearances are concerned, some

hunters look like weight-carriers, though in reality they are not—at least across country.

A good Hunter should be able to do a couple of big days' hunting thrice fortnightly, and say a couple of ordinary runs each week during the season.

Height.—As to height, 15·2, or 15·3, or even 16 hands are very general.

A man about 5 ft. 6 in. should try and get a Hunter standing 15 hands—not more than 15·2.

Action.—A good Hunter should have “shoulder”-action. This allows him to “bend” freely.

As regards the performances of clever Hunters, there are considerable differences.

Jumping is an inherent quality in animals of hunting lineage, and appears to be second nature under these circumstances.

The worst possible fault of a Hunter is that of “refusing” his fences—provided the jump be a reasonable one, though a perfect Hunter will rise to any jump his master desires.

A clever Hunter does not need the hounds in sight to persuade him over his fences (cold-blood jumping).

The Hunter must have plenty of “touch” and “go” in him, cantering up to his “jump,” and at a word *over*, clearing his ditch, hedge, etc. Lazy jumpers are dangerous.

The experience of old Hunters sometimes leads them to miscalculate their jump, producing, very often, a serious or fatal fall.

As six years is the period of equine perfection (race-horses excepted), it follows that, at this age, a properly-trained Hunter should be at his prime.

A finished Hunter is, perhaps, the best for a learner to buy, provided that the animal is practically sound in other respects.

However, we consider it a very good plan for the would-be purchaser to see the animal at his fence along with the hounds; likewise in cold blood. This may entail some extra expense—still it is worth the trouble, money, etc. Having done this, submit the animal to a qualified veterinary surgeon for certification as to soundness or otherwise. The buyer knows exactly what he is getting under these circumstances.

A Hunter may be catalogued as a clever fencer, etc., yet be useless.

Breeding.—With regard to the breeding of Hunters, perhaps there is nothing to surpass a thoroughbred sire, of the shape and build of a Hunter, provided that he is sound and free from vice. Arab sires are sometimes used. A good mare is essential for a mother. Never breed from a weedy animal.

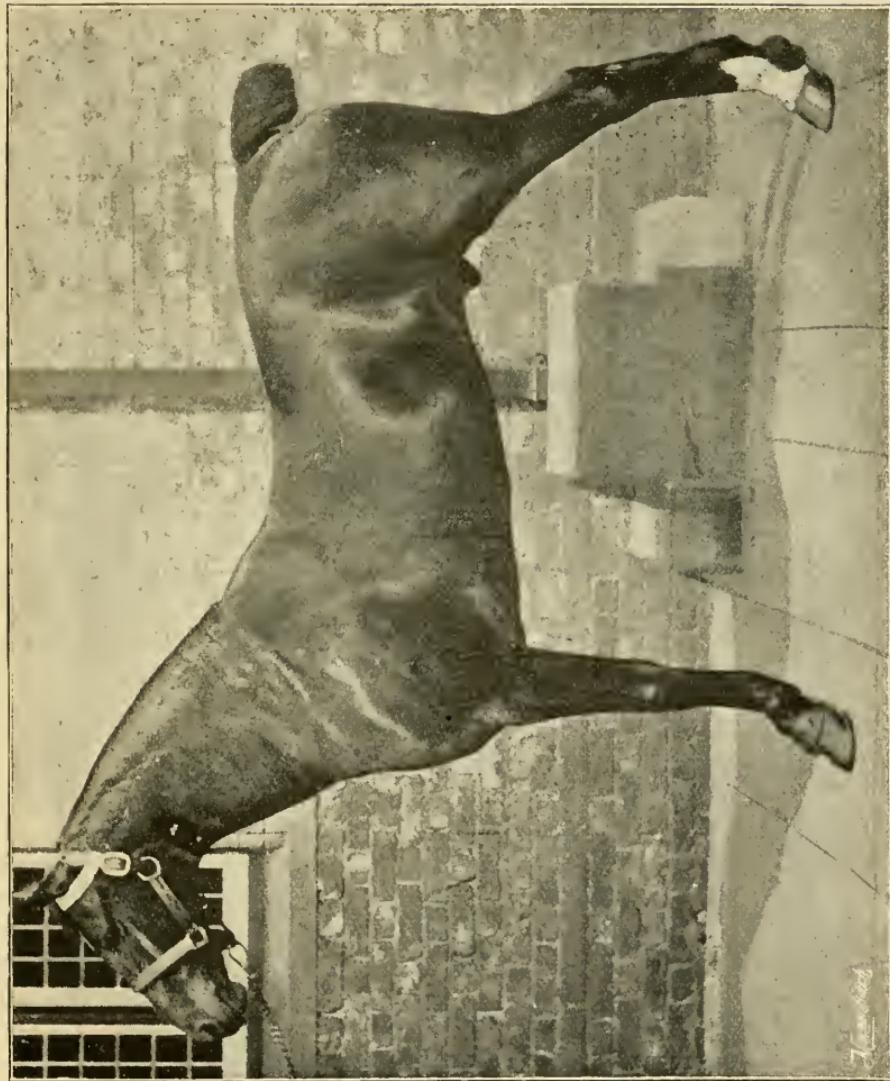
Clean-legged cart mares, although used, don't produce the best Hunters. The same may be said of Clydesdale and Shire mares.

Before breeding from a mare for Hunter-stock, it is desirable to look a little into her pedigree, so that the possibilities of the pros and cons of success may receive their due consideration before wasting time and £ s. d.

The breeding of "Weight-carrying Hunters" seems to be most rationally planned by using a thoroughbred, Hunter-like sire to a Hunter mare—one which can or has carried 14 stone.

During summer, Hunters can be used for harness purposes.

The Hunters' Improvement Society has done much towards the encouragement of systematic mating, and the gold and silver medals awarded by this Society at the various Horse and Agricultural Shows encourage the production of clever fencers.



WEIGHT-CARRIER.

Our illustration shows a "Weight-carrier."

As already stated, we advise the purchase of an animal from a private party, though Messrs. Tattersall, of Brompton, London, have sales throughout the season. Sometimes by waiting a little, a well-known stud may happen to be offered for auction.

The Hunters' Improvement Society is encouraging breeders to try and establish a race of Hunter sires.

TRAINING HUNTERS

At or about a couple of years the youngster should be taught to jump a low rail, ditch, etc. He must be taught to stand quietly, and allow a light-weight rider to stride him.

First of all teach the animal to walk nicely. He must never be allowed to start before the rider is in the stirrups.

It must be borne in mind that the early training of a young horse does, to a very great extent, mark his future behaviour. Any attempts at viciousness must be put down with a strong hand—nipped in the bud at the outset.

Put on the double bridle.

When the snaffle-bridle only be used, it is a good plan to make use of a "training halter."

At the "first" or "maiden" mount, the rider ought to use the most persuasive methods. It may be necessary to lead the animal a little way whilst the rider is "up."

Very little must be done during the first lesson. A few minutes is quite enough. Five, ten, and fifteen minutes

will satisfy the first three lessons of breaking for the saddle.

After several lessons, the animal can be made to trot, either by vocal encouragement, a gentle stimulus with the heels, or a combination of these.

If the horse is handled roughly it will most likely begin the plunging business. If so, the rider must sit tight and well back in the saddle, at the same time keeping up the animal's head—not by violent pulling on the bit, but by gentle traction upon it.

By bringing the animal from the "trot" to the "walk," and *vice versa*, it can be got to respond to the bit.

The early training should be carried on where there is perfect freedom from exciting influences.

A covered building, if large and high enough, can be transformed into a suitable training school.

Begin the leaping training either by allowing the animal to make short jumps for his fodder, or else lead him or her quietly over a very low horizontal bar. Don't take the least notice of the animal whilst it is passing over the bar. It is sure to follow.

Increase the height of the bar daily—say up to 18 inches or thereabouts.

Any faulty action—improper bending of the limbs—can be noted by observation, and corrected with slight taps from the whip.

This part of the training is most important, and too much attention cannot be given to it. A "slovenly" jumper is easily made, and always objectionable.

Avoid making the horse leap by the aid of the hand. Walking, trotting, and galloping is the order; lastly, from the halt.

Always end the lesson with a satisfactory leap, and then reward the animal.

Avoid the use of derivatives—the spur and stick ; at any rate the former.

In leaping, the fore-legs should bend well, followed by the “doubling under” of the hind ones. Good hock and shoulder action are necessary for this purpose.

The fore-limbs ought to receive the weight first during the “drop.”

When jumping from the gallop, the rider ought to sit firmly in the saddle, keeping his legs well back.

CHAPTER V

THE HACKNEY

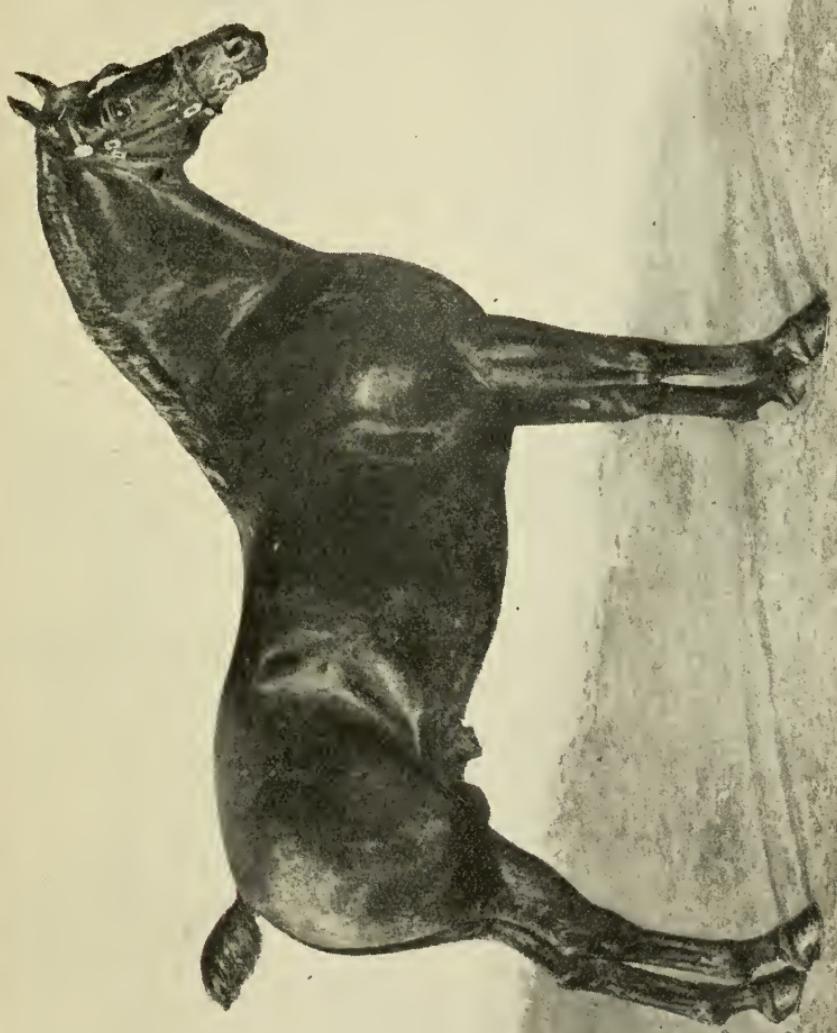
OF the lighter breeds of horses belonging to this country, the Hackney is probably the one of the greatest antiquity.

Being largely bred in Norfolk, it was formerly known as the NORFOLK TROTTER—indeed, to this day, we find many of the Norfolk farmers still keeping a good Hackney or two, whilst cherished remembrances of former studs bring back tender recollections of happier and more prosperous times. The home of the Hackney has long borne the saddle of agricultural depression, and our warmest sympathy goes out for those who have been unhappily thus affected.

Since the foundation of the English Hackney Horse Society in 1883, this particular variety of equine flesh has maintained its position as a horse of the highest utility, so far as the work of the lighter breeds is concerned. Annually the Hackney Horse Society holds its show, also publishes its Stud-book.

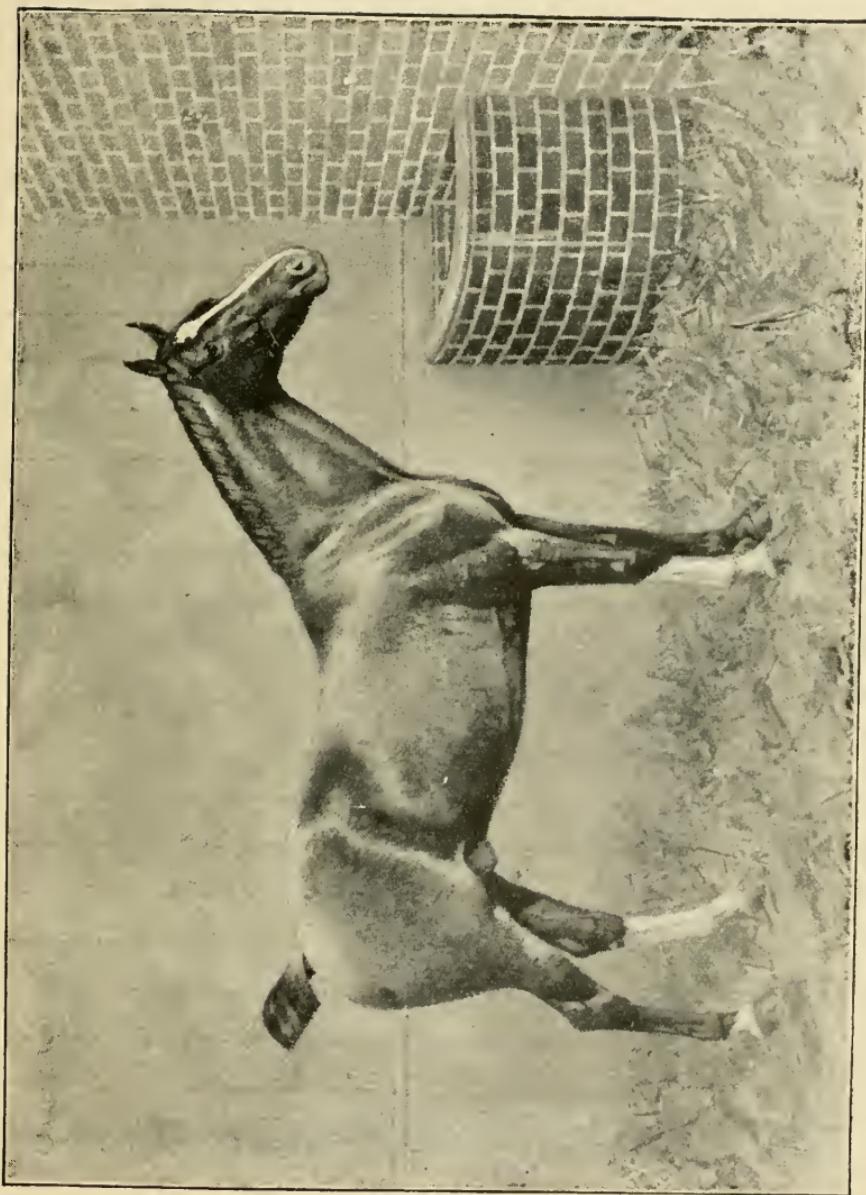
Origin.—About 125 years since, there appears to have existed a horse known as “Old Shales,” the sire of one “Scots Shales.” The first-named is said to have been the son of “Blaze,” the latter being foaled in 1733, whose sire was “Flying Childers,” and dam a Hunter mare.

It may be asked whether “Flying Childers” was a Hackney? We must answer in the negative. He was by



HACKNEY ENTIRE.

HACKNEY GELDING.



a Darley Arabian out of "Betty Leedes." His height was probably 15½ hands, or thereabout.

This horse appears to have had an unbeaten record at Newmarket. He was, it is said, foaled in 1715, therefore it follows that he was the progenitor of "Blaze" at seventeen years of age! Although this is quite possible, nevertheless we consider it an advanced age for a horse to be at stud.

Tracing the Hackney back, we see that Arabian blood flows in its veins, the introduction of which would almost certainly prove beneficial.

From the preceding brief description of the origin of the Hackney, some will argue that the breed is but the outcome of a cross. Granting that this is so, then it follows that almost every variety of horse has been derived in a similar manner.

Careful selection through numerous generations sanctions the right of exclusive usage; therefore the Hackney bases its claims upon the strength of this understanding, and universal consent.

Conformation.—Eyes full and bright, but ears not over long. Face broad between the eyes; shoulders deep and well sloped back, with moderate length of neck.

Avoid short straight shoulders.

Back rather short; ribs well rounded.

Fore-limbs short and powerful, with big muscular fore-arms, and 8 to 8½ inches below the knee. Pastern-bone of moderate length, but sloping at a nice angle. Avoid upright pastern-bones. The same may be said of "over"-slope.

Feet proportionate and well placed.

Hind-quarters broad and well clad with muscles, descending into well-developed, but not over-bent hocks.

The so-called "sickle-shaped" hocks distinctly predispose to "curb."

The tail should be set on rather high up, and its carriage graceful.

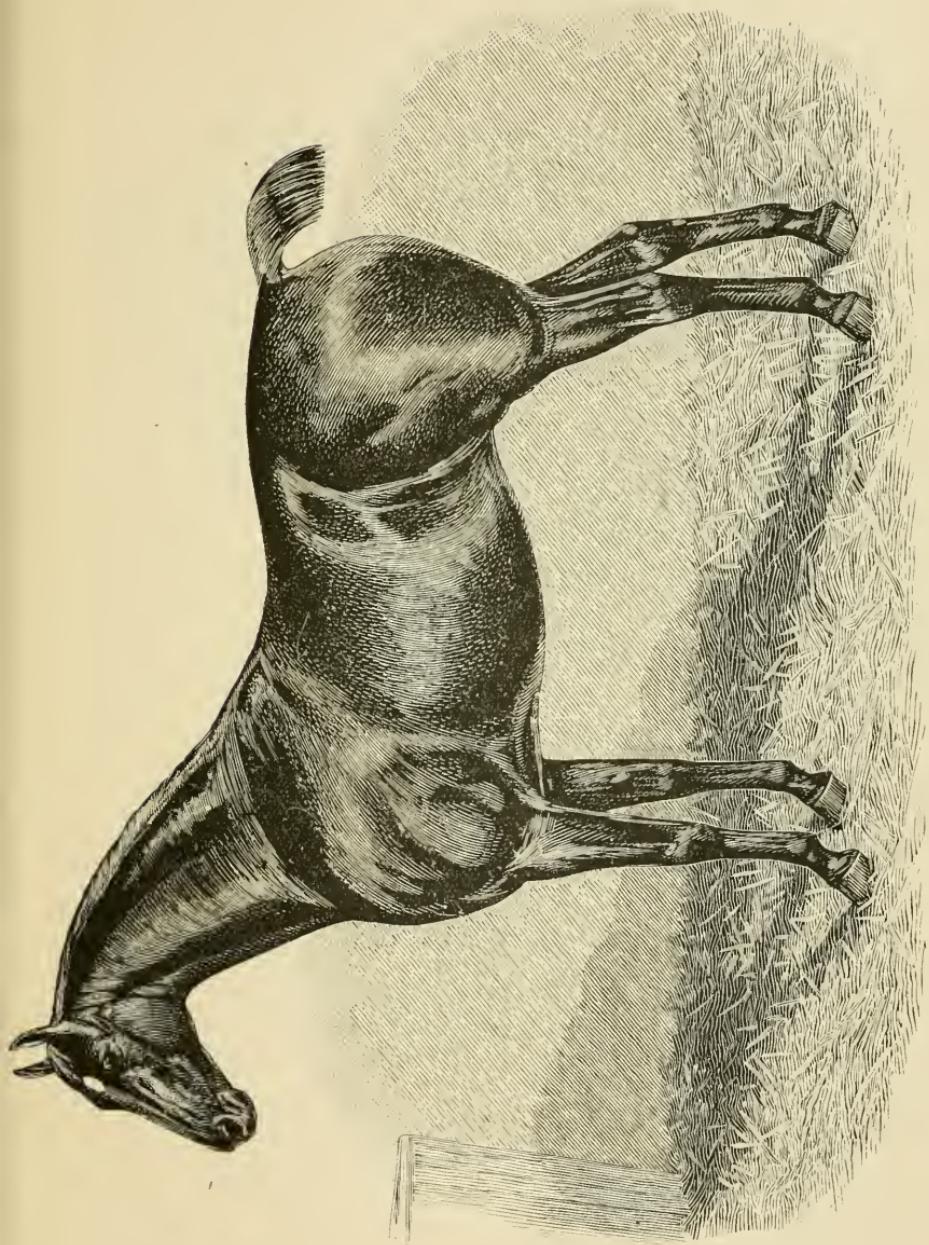
Height.—15 to 15·3 hands. It should hardly exceed the latter, but big Hackneys are now bred.

Colour.—Any colour, if good in other respects. We like chestnut. It is said that a good horse may be any colour.

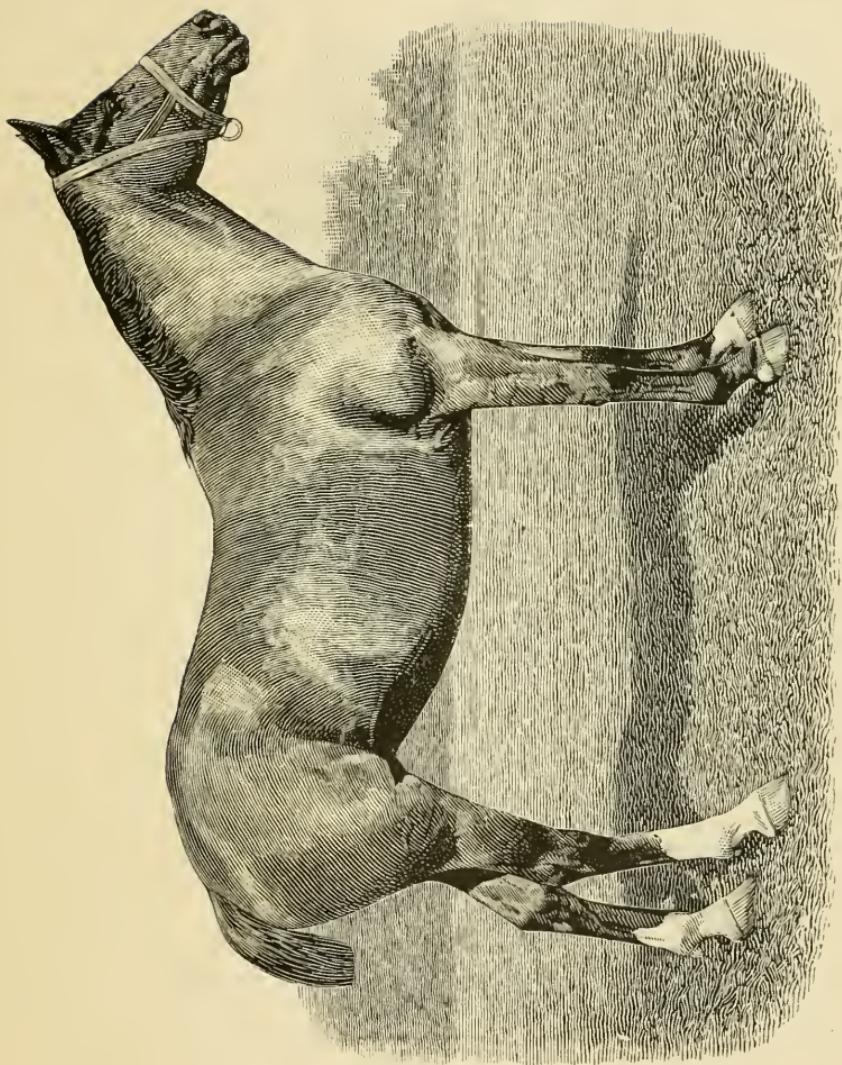
Action.—Round and regular.

Uses.—Unequalled for general purposes.

A typical Hackney Entire, Gelding, and Mare is shown in the illustrations.



HACKNEY MARE.



HACKNEY FILLY.

CHAPTER VI

THE HARNESS HORSE—THE PARK HACK—THE COVERT HACK

THE HARNESS HORSE

ALMOST any breed of horse can be trained to run in harness, and we consider that it is an excellent plan to have the animal broken in for this purpose, if there is the least chance of future affairs rendering it desirable to work the horse in this way, no matter whatever his or her special avocation may at present be. Many circumstances render it desirable to be prepared for failures or shortcomings, and though a horse may fail to satisfy his owner's original intentions, he can, if judiciously trained, be rendered otherwise useful.

We do not wish it to be understood that every horse makes a "good" animal for harness, but the majority can be rendered "useful" in this sphere.

A good carriage-horse should look well in harness, and whilst standing he should be particularly imposing.

High-steppers are certainly very ornamental, but, unless carefully used, this display of equine energy becomes unprofitable, especially excessive knee action.

For drawing a full-sized brougham or landau, a horse about 15 hands 2 inches will be found suitable.

Before purchasing a carriage-horse, it is necessary to fix upon the size of the carriage, or else the converse.

Nothing looks worse than the sight of a horse in harness which is either too small or too large for him.

A great many of the home-bred large-sized carriage horses have a good deal of the Yorkshire Coach-horse or Cleveland Bay in them.

Hackney crosses are particularly suitable for victoria, phaeton, or brougham work.

Horses used for dog-cart purposes must be particularly sure and well formed upon their fore-limbs especially. The six essentials for a high-class harness horse are—

- (1) Freedom from vice.
- (2) High (though not excessive) action.
- (3) A good mouth.
- (4) Beauty in harness.
- (5) Moderate pace.
- (6) Soundness.

As regards colour, this is more a matter of individual caprice, but for pairs we think that bays with black points, or true blacks, look exceedingly handsome in harness.

We do not care for white pairs, but like greys and browns, but the former colour has gone out of use.

Unmatched pairs seem more for the purpose of distinguishing their proprietor than that of beauty.

Roans and chestnuts make either pretty single or double harness horses, but we don't like "piebald" animals for either purpose, though one is able to overlook this in a horse full of style.

As regards sex, geldings are preferable, though, other matters being suitable, a pair of mares, or one gelding and a mare—if a pair has to be bought—will be found very satisfactory.

The price necessarily varies in accordance with the quality, and whether it is a single horse or pair required,

because the value increases greatly in a well-matched pair —far beyond that required for either of the horses separately. We have known very useful harness horses bought from £30 to £50, whilst those of the highest class can be had from 70 to 100 guineas.

In the West-End of London as much as 600 guineas has been paid for a pair, but such fabulous prices necessitate the highest possible quality, unless there is a gigantic swindle projected. High-class matched pairs can be got for about one-third this sum.

THE PARK HACK

The Park Hack, or Saddle Horse, as he is sometimes called, must possess style during the walk, trot, and gallop.

In accordance with the person desiring a hack, it is common to speak of such as a Lady's, Gentleman's, or Boy's hack.

Covert hacks are those used in the country, the duties of which Park hacks often perform, after the end of the season. Many colts are used for the first-named purpose, whilst for boys these animals make suitable Park hacks.

For riders of a nervous temperament, the hack must be quiet and have the best of manners.

Conformation.—Ease and suppleness during action ; pride and intelligence. Perfection of anatomical outline.

The body, for gentlemen riders, ought to be round and deep in the girth ; back rather inclined to be short than on the long side ; knees strong and broad towards their outer side ; pasterns square and of moderate slope. Avoid a horse having *upright* pasterns, or those "too oblique."

The fore-feet must be in proportion to the animal's size. High heels, low heels, or contracted heels are defects.

The withers should be rather high—never low for hacks, as a low fore-hand predisposes these horses to fall.

An important matter is a good mouth.

Colour.—Bay, brown, chestnut, and other dark shades.

Height.—About 15 hands, though boys and tall riders will require an animal in proportion. Thus a man of six feet would need a horse of 16 hands.

The figure of the rider has also an important bearing as to what class of animal he would show off to the best possible advantage. For instance, a tall slender man looks quite out of keeping upon a pony, or a short fat man upon a horse of 16 hands.

Good hacks can be bought at prices ranging from 30 to 100 guineas; covert hacks, and those for boys, girls, etc., for very much less.

CHAPTER VII

THE AMERICAN TROTTING HORSE

THE United States is famous for its trotting horses, and many of these animals have been imported into Europe. With regard to speed, the American and Russian Trotters take the lead, though we believe the English and Norman bred horses are capable of greater endurance.

It may be asked, "Why is America ahead of us in the matter of trotting horses?" Because time and money have been spent in perpetuating individual merits.

We are well enough aware that the Trotter has many ardent admirers in this country, willing to sacrifice both time and money for the purpose of maintaining a "high standard of excellence," still the Yankees are willing to go a step further in this direction, whilst indulgence in the pastime (trotting) is more universal.

Probably the merits of the American Trotters have been indirectly derived from an English thoroughbred known as "Messenger"—the stud services of which were in great demand in the United States. This horse was imported into Philadelphia during the year 1788. In colour he was grey, and stood 15 hands and 3 inches in height.

The sire of "Messenger" was a horse called "Mambrino," whilst a son of "Messenger" also bore this name—and he appears to have been truly worthy of his sire's reputation.

This latter horse seems to have been the founder of the

"Hambletonians" and "Mambrino Chiefs"—two of the most famous trotting stocks known.

There was an imported Norfolk Trotter known as Jary's "Bellfounder," and it was by crossing this animal with "Messenger's" stock that, indirectly, the famous trotting stallion, Rysdyk's "Hambletonian," was produced.

The value of Trotters largely depends upon the maternal side, though of course the sire is equally important.

Conformation.—The neck, shoulders, and fore-arms should be long ; chest wide and deep ; withers low (except in saddle trotters) ; croup, thighs, and legs strong ; body long, having a long reach between fore and hind limbs ; articulations of joints in limbs sharp and wide, admitting of free flexion and extension.

When in action there should be perfect harmonization of the movements, without waste of energy by excessive uplifting of the feet, etc.

Regularity, swiftness, and beauty of action are the desired *trio* in the Trotter.

We have seen these overlooked, in horses trotting in harness, upon uneven ground.

Colour.—As regards colour, little importance is attached to this.

Height.—About 15·2.

Prices variable ; very high figures are often paid.

A reasonable stud fee for a fairly good horse is about five guineas.

Many of the stud horses in this country are "Standard"-bred.

TROTTING IN HARNESS (SINGLE AND DOUBLE).

The Trotter is harnessed to a very light vehicle known as a trotting gig, sulky, or skeleton machine. Other forms

of light vehicles are often substituted for these. The gig, as a rule, accommodates one person.

A recent form of trotting sulky is fitted with pneumatic tyres.

In the United States the term "Buggy" is applied to vehicles of this description.

In order that a horse may secure an official record, the most important matter is that such animal shall be able to trot a mile over a course measured three feet from the pole, bearing a burden of 150 pounds in the vehicle.

REGISTRATION OF STANDARD TROTTERS.

The following are the rules for registration of the above :—

1. Any Stallion that has a record of 2·30 or better, provided two of his progeny have records of 2·20 or better, and provided his sire or dam is already a Standard animal.
2. Any Mare or Gelding that has a record of 2·25 or better.
3. Any Mare that has a record of 2·30, provided her sire is Standard and her dam is by a Standard horse.
4. Any Stallion that is the sire of four animals with records of 2·30 or better, or the sire of three with records of 2·25 or better, or two with records of 2·20 or better.
5. Any Mare that has produced an animal with a record of 2·25, or two with records of 2·30 or better.
6. The progeny of a Standard horse when out of a Standard mare.
7. Any Mare whose sire is Standard, and whose first and second dams are by Standard horses.

TROTTING IN THE SADDLE.

Harmony of action is just as important—though easier maintained—as when the animal is trotted in harness.

A wide enough and even course should be selected for the trial of the trot.

No matter whether trotting in harness or saddle, the

rules specify that every horse which *breaks* must resume the trot at once. Many good horses fail to score through this fault.

Constant education is necessary in order to attain perfection of trot, though we believe that a great deal depends upon the rider or driver, and the course.

CHAPTER VIII

THE THOROUGHBRED, OR RACE-HORSE (RUNNING HORSES)

THE origin of the Thoroughbred horse is a subject that has occupied the minds of many writers, and up to the present we think that the problem cannot be regarded as having been indisputably solved. Eastern blood appears to have been introduced—at least on the male side, and this to a considerable extent. Doubtless, the infusion of foreign blood has had considerable influence over the Race-horse of to-day.

Arabian and Barb horses play an important rôle in the history of the Thoroughbred. These were the Oriental sires of the seventeenth century recorded by one Mr. Weatherby, a descendant of whom may be accredited with having published the first edition of the Stud-book.

Many Oriental horses were brought to Europe by the Crusaders.

The “Markham Arabian” was an imported horse, sold to King James I. for the sum of £154. According to Markham, the English-bred horse was then capable of outrunning the foreigner. The origin of Mr. Markham’s plain-bred English horse is obscure, thus rendering us little information that is of much value, historically.

One horse which plays a prominent part in the history of the Thoroughbred is the “Darley Arabian,” brought over

by a distant relative—Mr. Darley, a Yorkshire gentleman.

Following this came the “Godolphin Arabian.”

“Eclipse” descended from the first-named horse.

There is considerable doubt as to whether Godolphin was a Barb or Arabian horse.

The best Race-horses have some of the latter’s blood flowing in their veins.

From the last-named horse, “Matchless,” “Prime Minister,” “Knight of Karo,” etc., etc., have descended.

The celebrated “Eclipse” was a horse about $15\frac{1}{2}$ hands in height, by “Marske,” a grandson of the “Darley Arab.” He was foaled in 1764. It is said that he had an Arabian type of head, and a very long neck.

Conformation.—As the object to be accomplished consists of a given distance which the animal, burdened with a slight weight, can travel during a unit of time, it follows that his or her conformation must be such as will allow—

(1) Length of stride.

(2) Number of strides during a unit of time.

High chest; long limbs; short loins; wide nostrils; wide and thick articulations; rounded croup; long neck; shoulders, croup, thighs, buttock, legs, and fore-arms, long; belly small (longer in mares); skin thin; hair upon same, mane and tail, fine.

Fore-ribs long; hind ones short.

Forehead broad.

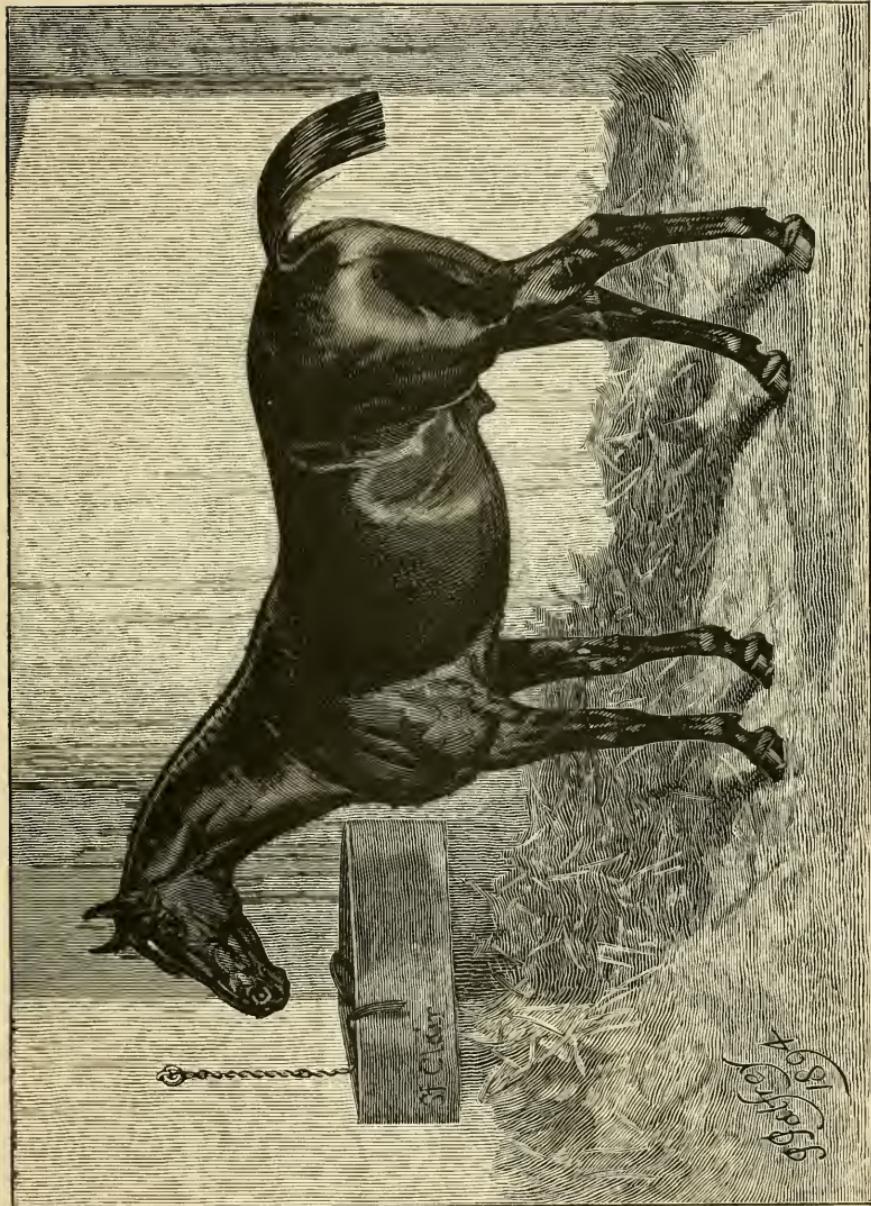
The animal ought to be graceful, nimble, energetic, staying and swift during progression.

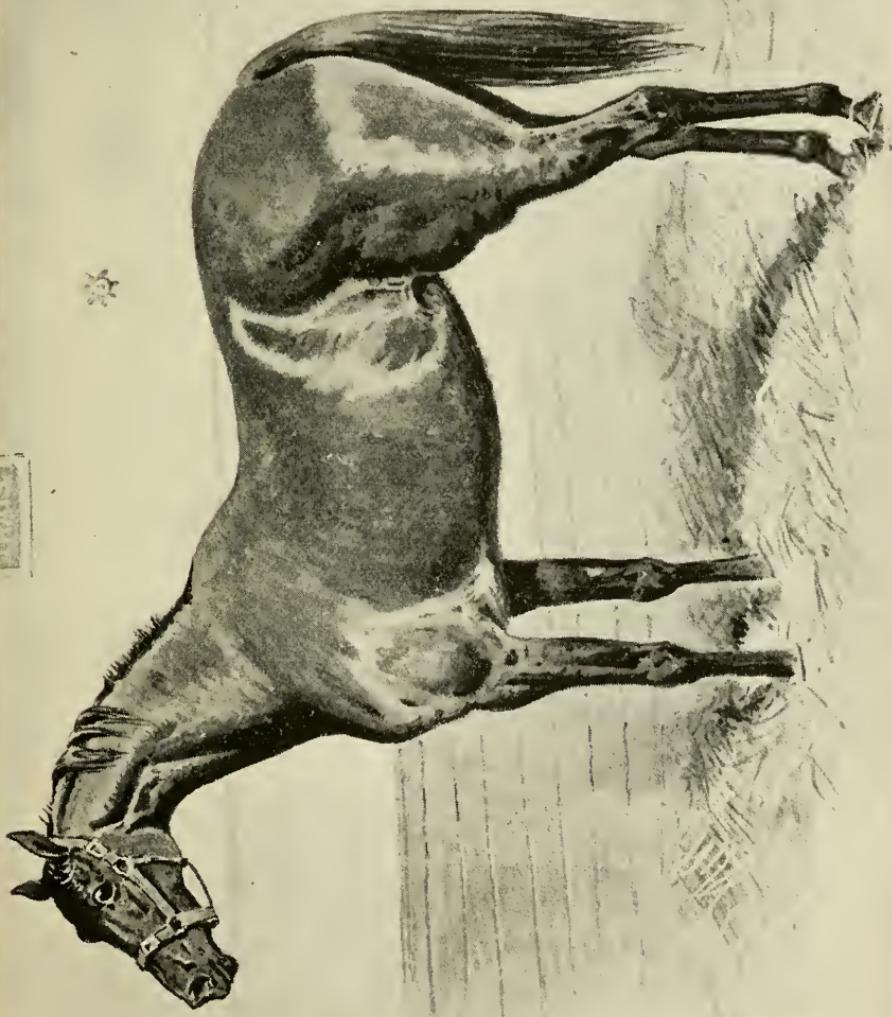
Endurance and sound constitution are indispensable.

Height.—Higher the better.

Colour.—Not of great importance—at any rate, secondary to other qualities.

THOROUGHBRED STALLION.





THOROUGHBRED MARE.

Bays and browns are common. The same may be said of chestnut.

Are but seldom grey.

Roan, black, etc., are not common colours.

Our illustrations show a Thoroughbred sire, and ditto mare.

As a sire, the celebrated horse "Stockwell" was probably the most successful animal ever bred. He was the sire of three Derby winners and four St. Legers. His stud fee was one hundred guineas.¹ "St. Simon," in the present day, bids fair to follow "Stockwell" as a progenitor of Turf Greyhounds.

THE DERBY AND THE OAKS

The twelfth Earl of Derby was the founder of both the "Derby" and the "Oaks."

The Oaks was established in 1779, the Derby in 1801.

The "Blue Riband of the Turf" is often applied to the Derby.

In 1865 the Derby was won by a foreign horse named "Gladiateur"; during the year 1876 by "Kisby," and in 1881 by "Iroquois"—the last-named being both foreigners.

The Derby of 1896 was a Royal one, his Royal Highness the Prince of Wales winning with "Persimmon," of which his Royal Highness is both the breeder and owner.

This Royal victory upon the turf has been the most popular one on record. We trust that it may not be the last.

¹ Considerably higher prices are frequently paid for the services of tip-top Thoroughbreds.

THE STEEPLE-CHASER

The Thoroughbred horse is commonly employed for Steeple-chase Racing, though many of them are turf-castaways, or failures. The half-thoroughbred was formerly largely bred for this purpose.

Steeple-chase Racing is, in our opinion, much more exciting than ordinary racing. The obstacles placed upon the track are hedges, walls, brooks, ditches, trenches, etc., over which the horse must leap.

Nothing can be more exciting than to witness a good steeple-chase, more especially if good horses, good riders, and a good course are present.

A horse having high withers, strong hind-quarters, well-developed joints and a short body, and trained to be a free and easy jumper, is the sort desired for the work of the steeple-chase lover.

As regards colour, little importance need be attached to this provided the horse is quick and a clever jumper.

The training of a steeple-chaser is an important matter. Long gallops are necessary, but these should never be given if the horse appears distressed. The pace and amount of daily exercise should be brought about gradually. Take gorse-hurdles once a week. Either in flat or cross-country riding your horse requires to be in good, hard condition. The respiratory and muscular systems must be got into their highest pitch of perfection.

CHAPTER IX

POLO PONIES AND POLO

A GOOD Polo pony must have a gentle temper, speed, staying power, constitutional stamina, suppleness, intelligence—indeed, all the qualities of excellency.

Small ponies of any breed are quite useless for polo-playing. Our illustration depicts a “useful sort” for the purpose.

Barbs and Arabs, though wanting in speed, have all other requisite qualifications.

Egyptian ponies, small-sized Thoroughbreds, New Forest, improved Exmoors, American, and Indian country-bred ponies are all more or less suitable for polo-work.

Pluck and fleetness of foot are the chief recommendations of the Thoroughbred pony.

As a rule, Thoroughbreds cannot be considered the stuff for making good Polo ponies.

High withers prevent expeditious turning.

Eastern ponies are difficult to surpass for polo-playing. The shoulders and withers of these animals are particularly suitable for the purpose.

Syrian ponies make excellent polo animals.

Barb horses can be had in Morocco, and are frequently imported into England. Many of the so-called Maltese ponies are nothing but Barbs.

The height of the Barb horse is about 14 hands; but a Barb pony is only some 12 or 13 hands in height. These latter are too small for polo-work.

The district of Mogador would be a good place to visit in search of a suitable Barb. The west of Ireland is a large breeding-ground for ponies. Good Polo ponies can be got there.

A couple of crosses, either with an Arab or Thoroughbred, and back again to the Connemara or Cushendall ponies, give good results for polo-work. Avoid Hackney crosses. A good cross for the production of a Polo pony is that with the Arab or Barb stallion and a Polo pony mare of English breeding. However be this as it may, one meets with many different types of Polo ponies at the Hurlingham grounds.

Since the establishment of the Polo Pony Stud-book Society, it may be anticipated that a more settled type of animal will be ultimately founded. The formation of this Society is a step towards this end.

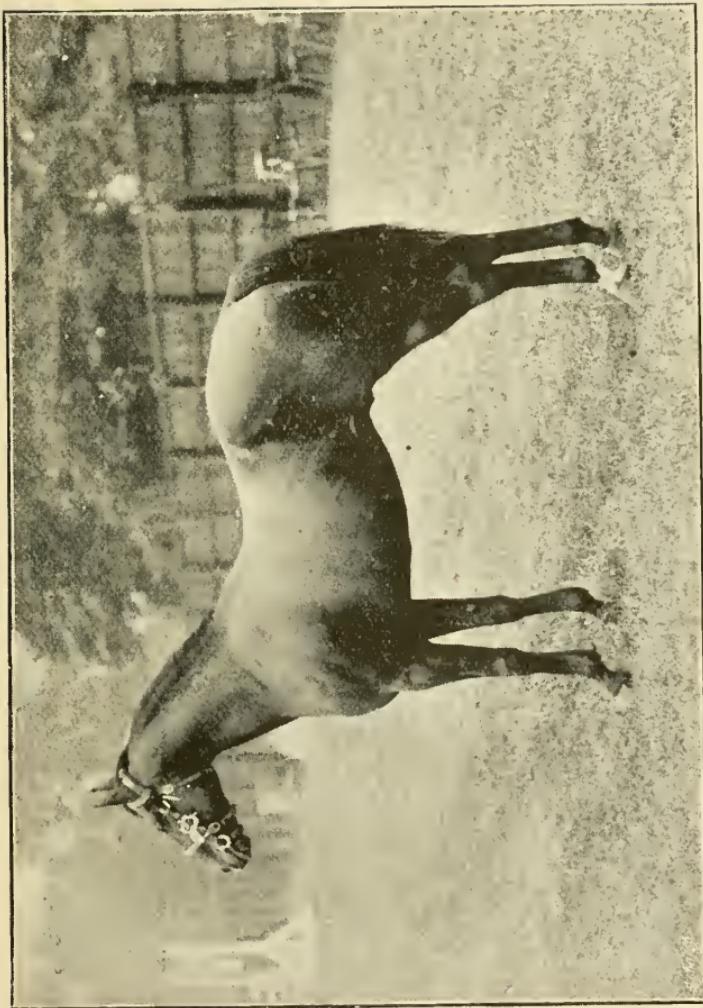
About 14 hands is a useful height, but the Polo Committee of Hurlingham do not, we believe, allow the animals to exceed this height.

Prices.—From twenty to several hundred guineas, according to the reputation, breeding, etc., of the animal.

POLO-PLAYING

The term "hockey on horseback" was at the outset—in this country at least—applied to this game. It appears to have been first played in this country by certain subalterns of the 10th Hussars. At that time small ponies were used, and the game was played with hockey-sticks and cricket-balls.

Hurlingham and Ranelagh are now the seats of most of the principal polo matches.



POLO PONY.

In the present day, polo must be regarded as a scientific game, demanding as it does not only excellent horsemanship, but also a large amount of skill in other ways.

The game is extensively played in England, India, France, America, etc.

Polo clubs are numerous throughout England, less so in Ireland, and least known in Scotland.

The rules and bye-laws being numerous, space forbids their appearance here.

CHAPTER X

PONIES

The Welsh Pony—The Exmoor Pony—The Shooting Pony—New Forest Ponies—Iceland Ponies—Children's Ponies—Pannier, Harness, and Riding Ponies—The Cob.

THE WELSH PONY

THE Welsh ponies are characterized by their prominent eyes—a feature which they still retain in spite of the infusion of different blood. They vary several hands in height, therefore can be made to serve a variety of purposes. Being the inhabitants of mountainous districts, they are very sure upon their feet, in this respect resembling the mule and mustang.

Many of these ponies are used for working in the coal-mines.

Well-bred Welsh ponies of a suitable height would find sale for polo; others for saddle and harness purposes, or for breeding polo animals.

THE EXMOOR PONY

This breed of ponies averages 12 hands in height, are often dark-bay in colour, with a flesh-coloured nose. Their legs are short, and they have good strong backs and shoulders. As a rule they have good feet.

So far as speed and endurance are concerned, they are equal to other breeds.

During the October Fair at Bampton there are generally a number of this breed of ponies for sale. Many of them are, however, of very inferior quality, so that one must not be disappointed if a visit to this fair does not end in a deal.

As regards price, Exmoors do not as a rule fetch a great deal of money—possibly one reason why breeding operations are not so extensively indulged in.

THE SHOOTING PONY

Welsh and Exmoor ponies make excellent animals for this purpose if properly trained, though there is not any special breed particularly adapted for the work without previous schooling.

The qualifications of a properly-trained animal are—to follow, creep, take standing leaps over fences, etc., carry dead game, and above all, that he be not gun-shy. He should allow his master to take aim off his back or around him, yet remain as steady as a rock.

These are some of the more important qualities of the shooting pony. (For manner of training, see chapter on this subject.)

NEW FOREST PONIES

As the name implies, this is a variety of pony dwelling in the New Forest; likewise, in all probability, one whose origin was in the afore-mentioned forest.

A few years since an association was started with a view to the improvement of the breed.

During the latter half of the eighteenth century, it appears that a Darley Arabian entire was turned loose into the forest, possibly for the purpose of getting a better class of animal.

The aspect of colthood is quickly lost with New Forest ponies, therefore it is necessary to look very carefully at the animal's age.

ICELAND PONIES

This is a hardy breed of ponies coming from Iceland.

Although considerable numbers have been, and still are imported into this country, the trade cannot be regarded as being of any particular importance.

The Iceland pony is hardy and willing, making a most useful animal for either riding or driving purposes, and such can generally be got at a very moderate price.

These ponies should be more sought after.

CHILDREN'S PONIES

PANNIER, HARNESS, AND DRIVING PONIES

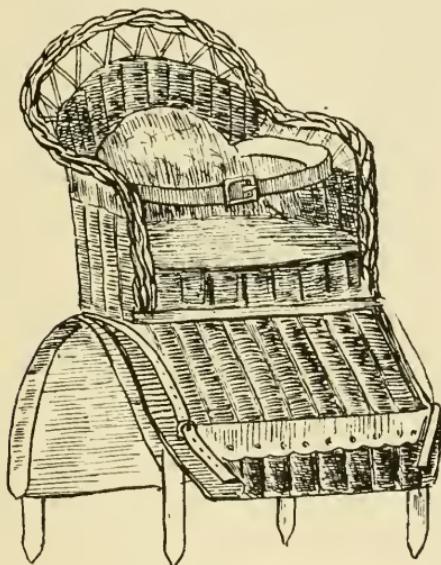
For Pannier purposes our pony should be very docile, have a broad back, a round barrel, well-carried head and tail, and move in a graceful, quiet, easy style.

There is no fixed height as regards a pannier pony, but we prefer one under 13 hands, or thereabouts.

The animal should be trained to walk in hand.

The harness may consist of a snaffle-bridle with large loops, so that the bit can be fixed to the flaps of the saddle by means of short reins (flap-reins). The girths must be broad.

If the babies do not balance, weights should be used for the purpose.



CHILD'S PANIER.

The wicker pannier (see sketch) is made to accommodate one or two babies.

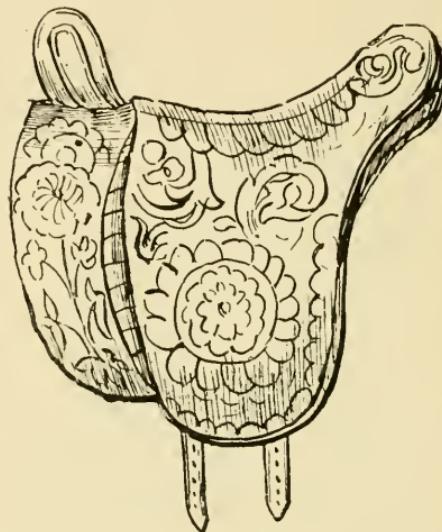
It is a very bad arrangement to have the children sitting back to back. They should look either to one side, or else in the direction of the pony's head.

It is necessary to lead the pony, using a cord, leather lead, or stick having a swivel at the end of it.

A pony may be defective for saddle uses, yet suitable for harness.

Straight and thick shoulders are common enough defects in ponies, and this is a fault for saddle purposes.

Riding ponies for boys should be rather flat-sided, but the body compact, close to the ground, and muscular.



CHILD'S SADDLE.

The pony should have energy, speed, endurance, and as robust a constitution as possible.

As to harness, a boy's pigskin saddle, fitted with safety stirrups, and a single-rein snaffle-bridle, along with a riding-whip, constitutes the necessary outfit.

THE COB

The term "Cob," although a somewhat ambiguous expression, suggests something between a horse and a pony,

suitable alike for driving and riding purposes, yet free from the stamp of a diminutive cart-horse.

High-class Cobs are always at a premium, and the difficulty of breeding typical specimens demands that this should be so.

Many Cobs make excellent weight-carrying hunters, provided their training and breeding has been favourable towards this purpose.

It is as a "general utility animal" that our Cob takes his stand. A hundred guineas is not an uncommon price to be paid for an A1 animal of this description.

The height ranges from 14 hands to 15 hands and 2 inches.¹ About 14 hands 2 inches is a useful sort, if well built.

For everyday use a high-stepper is unsuitable.

Conformation.—Short on the leg; cobby, muscular body and limbs; strong neck; chest wide; intelligent expression; well-formed joints; strong feet; docile temperament; neither too short nor too long below the knee; good all-round action. If for Park purposes, high action; perfect freedom from lankiness—in short, all-round, compact conformation.

Colour.—A matter of choice.

White we do not care for. Bay and chestnut both look very stylish. A roan Cob looks well in harness. Cream and grey colours are not to be despised.

Norfolk and Ireland turn out a few good, "cobby" animals.

¹ Although we have given this height, it is slightly over what we should regard as applicable to the term "Cob."

CHAPTER XI

THE SHETLAND PONY

LARGE numbers of Shetland ponies are constantly being brought from the Shetland Isles, but we believe that these bear no comparison to those reared at home, in which special care is exercised to preserve purity of breed ; at least, this is the case in certain well-known studs, such as the Marquis of Londonderry's.

The Shetland pony is a very natty little fellow both under the saddle and in harness. His average height is 10 hands—sometimes more, or less, than this.

Smallness of size, combined with quality, are the *desiderata* of the Shetland judge. Eight hands (32 inches) in height is occasionally met with in this breed of ponies.

The diminutive size of the Shetland is due to climate and food, and this is the reason why change of environment renders it a difficult matter to keep these ponies from becoming too big.

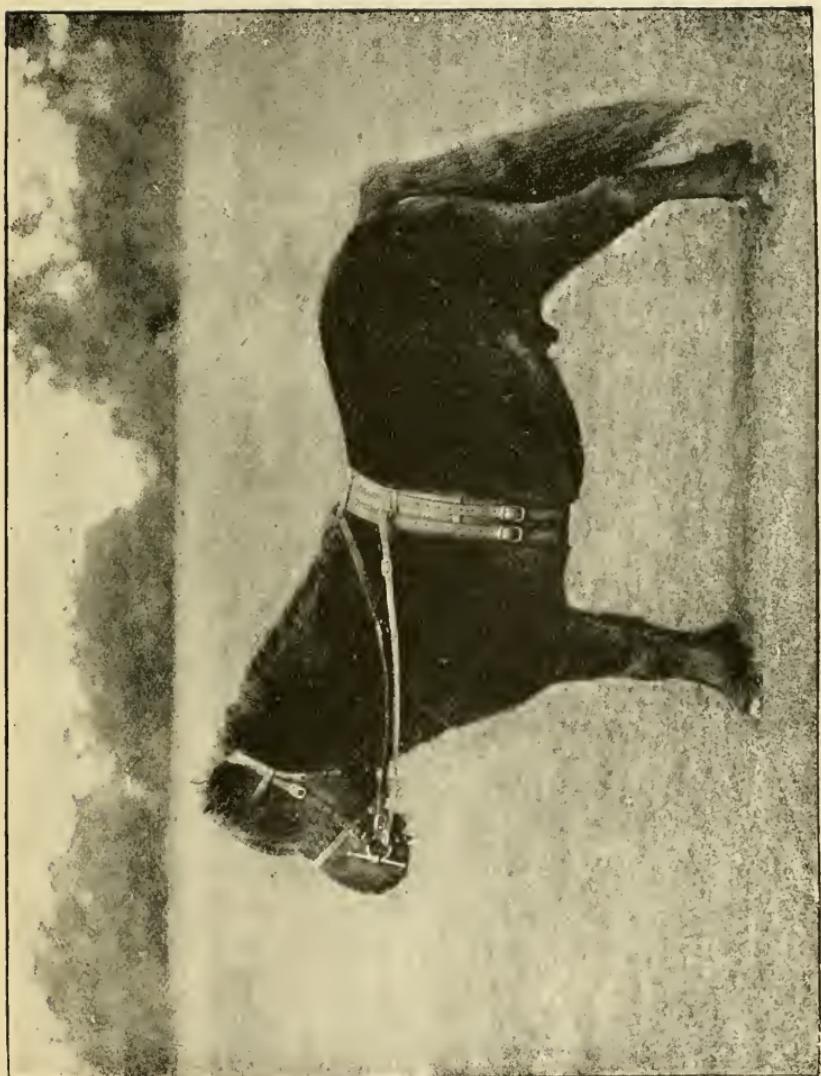
We believe that experienced breeders of the Shetland pony are considerably exercised in order to avoid the occurrence of this pernicious influence.

The commonest colours are brown, bay, and dun, often mixed with white hairs.

Some are piebald.

A pure white Shetland pony is certainly rather uncommon.

Conformation.—Head small ; eyes bright and intelli-



SHETLAND PONY.

gent ; neck short, fine above but widening out as we approach the shoulders ; back short, ending in broad quarters and sloping to a well "set-on" tail ; ribs well-rounded ; chest broad ; shoulders deep.

The fore-limbs should be strong, though fine and tapering, ending in rounded feet.

Uses.—Whenever it is desirable to have a pony under 12 hands, the Shetland is the breed to cast about for.

Are used to a considerable extent in coal-pits.

They make excellent pannier ponies.

Are equally good in harness. They are showy, have a good action, and in spite of their small step can cover a lot of ground in a short time.

As regards price, the smaller they are the more valuable they become, provided the pony is sound, etc.

Our illustration represents a typical Shetland pony.

CHAPTER XII

THE ASS AND MULE ASSES

IN this country the Ass is chiefly used by the costermonger, though to a certain extent we find him doing his duty around the various coast-towns, especially during the summer months.

Inherent docility being one of his qualities, brings him into favour either as a child's hack, or for harness purposes.

Saddled with a wicker chair or pannier, the youngest of children can be safely entrusted on the back of this animal.

Further, the outlay for the purchase of a good-looking young ass is comparatively small.

A well-groomed ass, a set of neatly-fitting brown leather harness, and a light village cart, makes an excellent turn-out either for children's pleasure, or that of an aged person.

Our illustration shows a she-ass saddled, with foal at her side.

The fine-limbed, dark-coloured donkey is to be preferred in place of the grey.

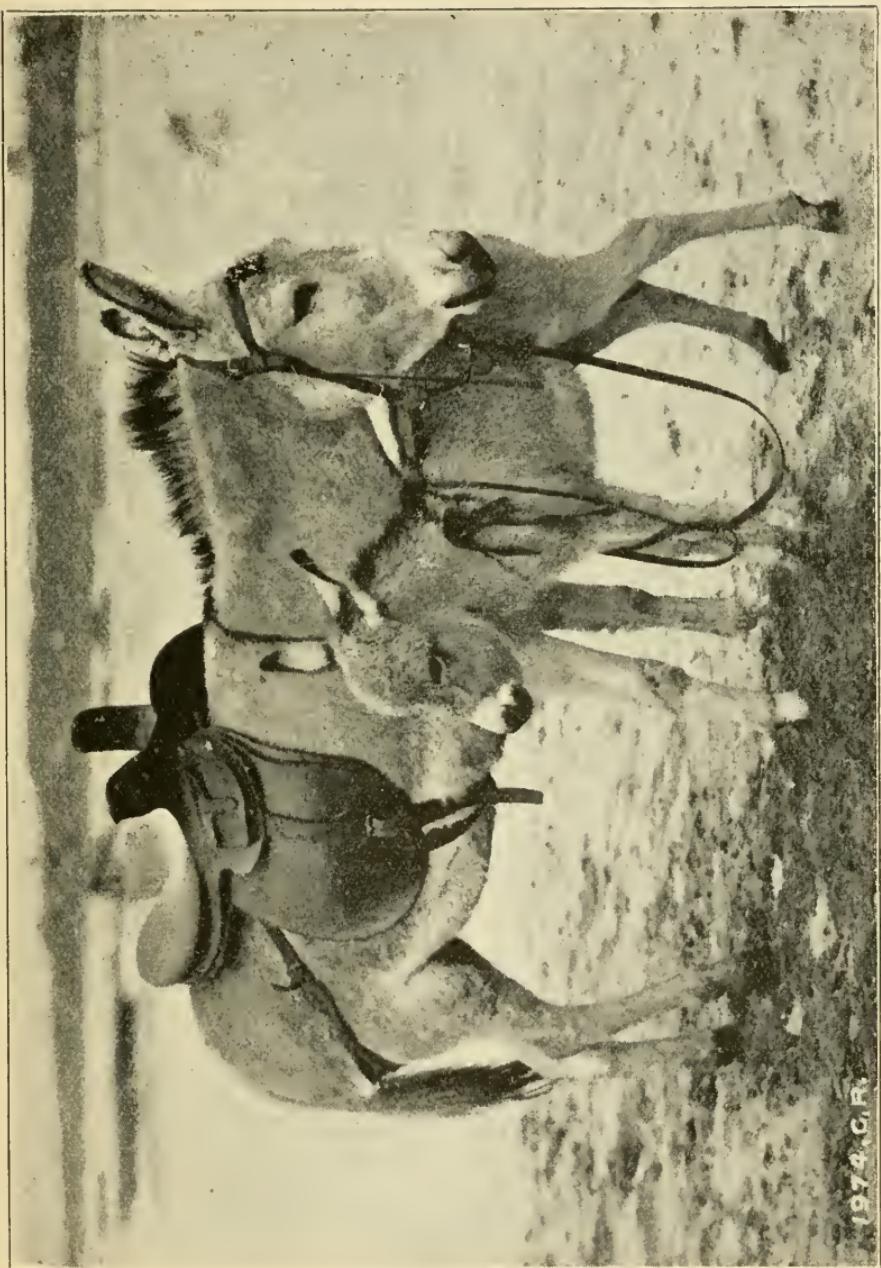
In the East, the ass is much valued for daily hack work. High prices are often given for a well-built white animal.

In Spain, the ass (Boorico) attains the highest state of perfection, consequently the people in that country largely use him as a beast of burden.

It may be asked, is the ass a hardy animal? So far as endurance is concerned, it is, but the climate of Arctic

SHE-ASS WITH FOAL.

D. C. R.



regions is altogether unsuitable to it. Under these circumstances, its unthriftiness is the converse of that in temperate or warm climates.

The produce of the ass is either a mule or a hinney.

Amongst the best breeds of asses, those found in the Poitou district of France are noteworthy.

The stallion ass is from $12\frac{1}{2}$ hands to $14\frac{1}{2}$ hands in height, of a black or brown colour with a white abdomen.

The head is large; ears long; neck and shoulders muscular; body long; breast broad; and belly roomy.

The mares are usually covered about May, but at any time between February and the end of July.

The period of gestation (carrying young) is twelve months.

In Scotland, the term "Cuddy" is frequently used in lieu of donkey, while the "Moke" of London and "Baudet" of France are synonymous terms.

MULES

The Mule is a "hybrid"—the produce of a jackass and a mare.

If, on the other hand, a she-ass be put to an entire horse, the produce is the so-called *hinney*.

The last-named is distinguished by having the tail, mane, legs, and feet like a horse, exceptionally, the head also. It is somewhat smaller than a mule.

There is very little mule-breeding in this country, but in France and Africa it is a most important branch of industry.

The former country breeds the best mules for heavy draught; the latter for saddle purposes.

The mules bred at Poitou are short in the leg, have

plenty of bone and strong joints, whilst the feet are good. Their height is from 15 h. to 16 h. 2 in. A good animal with youth on its side is worth from £50 to £80, or thereabouts.

The male is stronger than the female, and it is said enjoys immunity from certain diseases.

When the male arrives at eighteen months or so, it is put to work, and continues at it until three or four years of age, being then sold for exportation to Italy, Spain, etc.

In Poitou about 12,000 mules are bred every year.

To encourage mule-breeding, prizes are offered annually.

As a beast of burden the mule is superior to the horse.

For transport purposes during war he is largely used, proving, in mountainous districts, an invaluable beast for transporting cannon, etc., over passes where wheel-carriages cannot travel.

For sure-footedness he resembles the mustang.

A mule lasts longer than a horse, will bear more fatigue, and is capable of enduring extremes of heat and wet.

The foals are very hardy, and the cost of keeping is much less than that of a horse.

Usually the mule is sterile, but it is an advantage to castrate the males, because they are then rendered more tractable.

A driver of a team of mules is known as a *muleteer*.

CHAPTER XIII

FOREIGN BREEDS OF HORSES

The Persian—The Turcoman—The Dongola—The Italian—The Wahabee Horse—The Norwegian Pony.

THE PERSIAN HORSE

THE Persian is closely related to the Arabian. In appearance he resembles that animal, whilst he is equally hardy.

The late Shah of Persia brought over a typical pair of country-bred horses.

One of these animals was dark-chestnut, the other chiefly white.

Their heights were 14 h. and 15 h. 1 in. respectively. In this respect they are commonly a little higher than Arabians.

Conformation.—Forehead wide and flat; muzzle small and narrow; crest well formed; legs short but powerful; tail uniquely carried.

These animals make good staying and useful hacks.

THE TURCOMAN HORSE

This is a racing-built horse, trained for speed and distance. It is said that these horses will travel as much as a hundred and fifty miles per day, continuing this speed for a week or ten days.

These horses are almost destitute of a mane, and their height is about 15 or 16 hands.

Speed and endurance is one of their characteristics, indeed necessary, being commonly used for the purpose of quick transportation of their master to some place of safety.

THE DONGOLA HORSE

This breed of horse is about 16 hands in height, has rather long limbs and a fine coat. In colour they are commonly black-and-white. The breed has been successfully crossed with English mares, producing, we are told, good hunters.

THE ITALIAN HORSE

Very little need be said about the Italian horse of the past.

The breed appears to have been noted for its sturdy character, though wanting in quality. Many of the depicted Roman horses are, we believe, purely the outcome of their artists' imagination of the breed.

The Roman horse was, doubtless, an animal of particular conformation, and such has led to erroneous conceptions.

Within recent years, the Italian Government has imported Norfolk-bred Hackneys for stud purposes, and in this way are making considerable improvements in their horses.

THE ARABIAN HORSE

Under the heading of Dongola, Turcoman, etc., horses, we have briefly referred to the Arabian.

The Wahabee Arabian horses are amongst the most remarkable for beauty of contour and speed, though of course defects are seen in this as in every other variety of horse.

The average height of these horses is about 14 hands, whilst the usual colours are bay or chestnut, less frequently black or white.

Sloping shoulders and beauty of haunches are prominent features.

These horses are brought up in intimate association with their owners, consequently their docility is easily accounted for. Many of these animals are ridden without saddle, reins, bit or bridle. They readily respond to well-understood movements of the knee, etc., of their rider.

Their journeys often enough occupy fourteen or fifteen hours in full blaze of the sun, and this they do at a high speed without food or water.

Long used to roaming the dreary sun-scorched desert, the constitution of these animals is matchless.

Most of them are entire, nevertheless as quiet in their behaviour as (sometimes quieter than) the geldings of this country.

Syrian Arabs are usually from 12 to 14 hands in height.

Our illustration (p. 97) is that of an Arab stallion.

NORWEGIAN PONIES

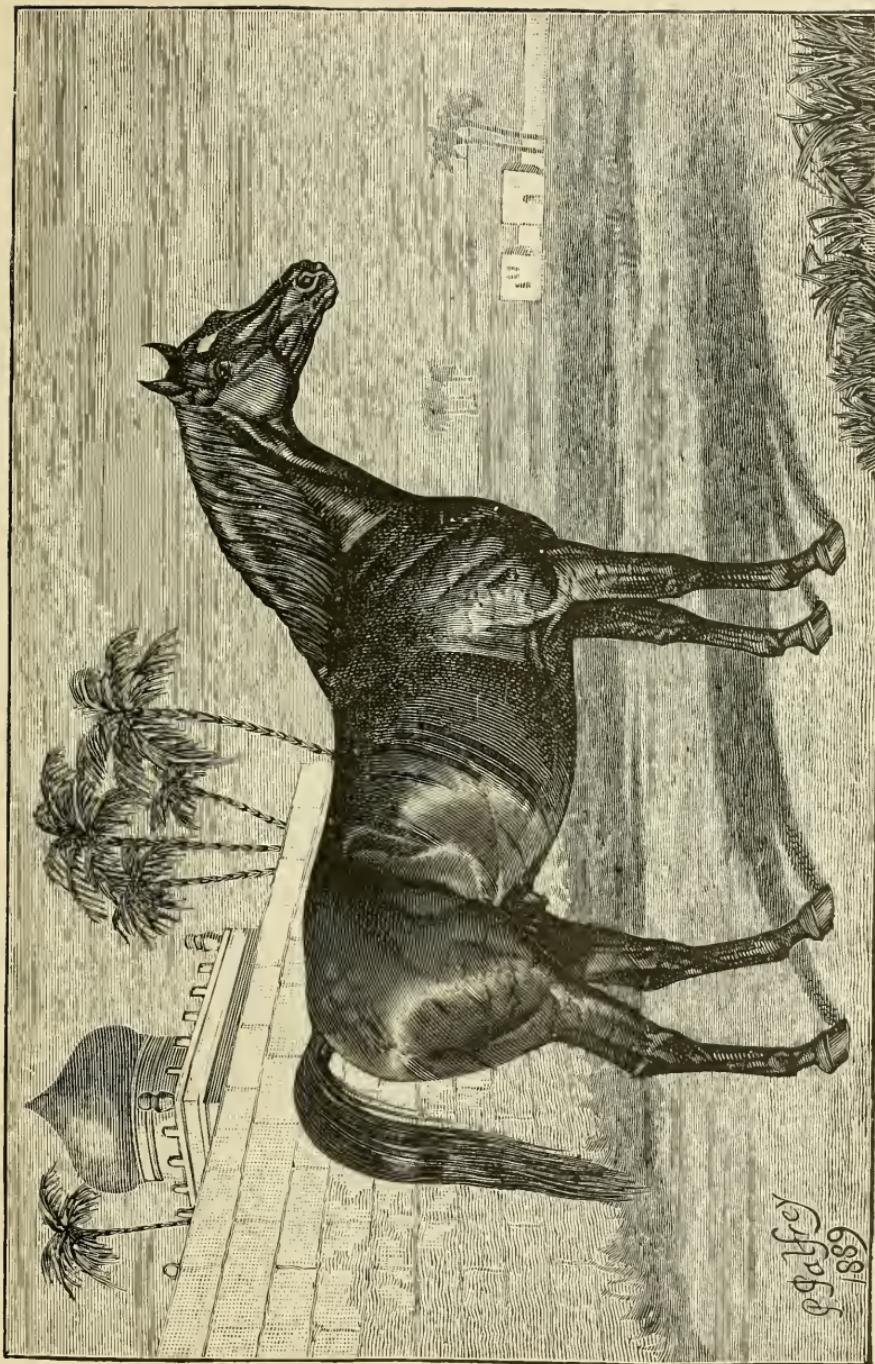
This is a hardy race of ponies, the animals being capable of enduring cold weather, hard wear, and scanty fare.

At one time large numbers were imported into this country, and as a rule gave every satisfaction.

They make good riding or phaeton ponies.

The home demand having increased, their exportation is not of any particular commercial utility to the nation.

ARAB STALLION.



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CHAPTER XIV

FOREIGN BREEDS OF HORSES (continued)

Cape Horses—Russian Horses—The Indian Horse, or Mustang—
Australian Horses—Servian Horses—Spanish Horses—Norman
Horses—Portuguese Horses—The Flemish Horse.

CAPE HORSES

THE Cape horse is small, the usual heights being 13 to 14 hands, more rarely 15. They are said to be very even tempered.

In colour they are mostly bays, though some are light-grey, others dark-grey, less frequently white.

So far as beauty is concerned, we deem their comparison with the Arabian horse quite out of the question.

RUSSIAN HORSES

In Russia, horses are largely used as a means of conveyance, and this is just what one naturally expects where the country is so vast in extent, and where there is an absence of railroads, excepting such as connect the chief cities, and places where the shipping industry is carried on.

In summer, riding is largely indulged in, but during the cold season sledge-driving affords the only means of transport.

About a century since, Count Orloff imported from England some blood-horses, in order to cross the native mares with them. The result of this became complete in about thirty years—a distinct type of horse having been produced, to which the name "Orloff trotter" is applied.

These horses are large, commonly brown, less frequently grey in colour, and for hardiness not to be surpassed.

They will stand extremes of cold, and this upon the most scanty fare.

The Orloff saddle-horse is somewhat different from the trotter, the former having greater length of limb.

Both varieties are occasionally imported into England.

THE INDIAN HORSE OR MUSTANG

The wild horse (Mustang) of Texas is identical with the Indian pony. The pony, as used by the Red Indians, is about 14 hands in height. He is neither fed, groomed, nor shod. For food he is entirely dependent upon his own exertions. Having to "rough it," as the saying goes, he does not exhibit any beauty, so far as his personal appearance is concerned.

Leading a hard life, upon a scanty diet, he is naturally small in point of size.

It is stated that these horses can climb almost perpendicular hills, descending them with astonishing sure-footedness. In this respect he is equal or even superior to the mule.

These horses are most suitable for the rough-rider, because it appears that domestication renders them either idle or vicious,

AUSTRALIAN HORSES

The early settlers in Australia imported horses from the Cape and Valparaiso, crossing these with blood sires imported from England.

This importation of Thoroughbred horses resulted in the Colonies of Victoria, New South Wales, and South Australia becoming stocked with blood-horses having the best possible pedigrees.

Arabian horses have also been imported.

The Australian bush-horses are generally vicious, indulging in the so-called "buck-jumping"—a practice which demands the horseman to vacate his seat, probably with the saddle following him.

Compared with the English horse, the Australian is inferior in every respect, unless that of endurance upon short rations. Not uncommon journeys performed by these horses are from one hundred to one thousand miles.

SERVIAN HORSES

Although Servia is spoken of as being a great horse-breeding country, the animals are of very inferior quality as a rule.

We do not doubt but that there will be some good horses in Servia, but we are informed that this is rather exceptional than otherwise.

The Servian horses are tall beasts, wanting in almost every particular.

SPANISH HORSES

Some of the Spanish horses are renowned for their beauty—indeed, Spain has been famous for its horses from time immemorial.

The Genet is said to be a descendant of the Barbs, which latter were brought into the country by the Moors during their conquest of the greater part of Spain.

The Neapolitan, or Spanish Horse, is 15 or 16 hands in height, has a short powerful neck and strong shoulders.

The fore-limbs are well developed, whilst the hind-quarters and limbs are almost the *beau ideal* of conformation.

It is their stately walk and trot which proves so fascinating to the horseman.

Most of the horses are entire, whilst the mares are chiefly used for breeding purposes.

In Spain, the bulk of the heavy draught work is done by mules.

NORMAN HORSES

The Normans had, originally, both saddle and harness horses. The former, being strong, were in great demand when knights were clad in armour.

By the importation of English blood-horses, the Norman breed considerably improved.

Some of the Normandy-bred carriage-horses bear a distinct likeness to the Yorkshire-bred horse.

The Roman nose was, formerly, very common amongst the Norman breed of horses.

A variety of horse, known as the "Percheron," has been imported into England for quick, heavy draught work. Numbers have been imported into the United States.

PORtUGUESE HORSES

Portuguese ponies are about 13 hands in height. They are very active, and capable of carrying a heavy-weight rider. Many of them are, however, of very inferior quality.

THE FLEMISH HORSE

These horses were of high stature ; stout build ; and used for draught purposes.

It is said that six of these horses were imported from Flanders by the Duke of Hamilton's ancestors, for the purpose of improving the breed of horses in the county of Lanark, to which the fine qualities of our present Clydesdales may be due.

The imported horses are thought to have been black stallions. The Flemish horse was slow in draught.

CHAPTER XV

RUDIMENTARY ANATOMY OF THE HORSE

A. THE SKELETON OR BONY FRAMEWORK

If the skeleton be divided longitudinally, it will be found that the right and left halves are identically the same each divided segment corresponding to its fellow.

As this animal possesses a back-bone consisting of numerous segments (*vertebræ*) united together to form a chain—extending from behind the head to the tip of the tail—it is known as a “vertebrate,” in contradistinction to those animals without such (“invertebrates”). During *intruterine* (within the womb) life, these various bones (head excepted) are in the form of cartilage or gristle.

It is a considerable time after birth before the bones have lost this rudimentary cartilaginous condition. This is particularly applicable to the ends of long bones—*i.e.* those of the limbs.

The gradual replacement of the cartilage by bone is known as ossification, which in the case of long bones (cannon-bones excepted) begins from three centres or points.

In accordance with the form (shape) which a bone assumes, it is usual to speak of it as being *irregular, short, flat, long, elongated*, etc. For instance, the back-bones are irregular, the shoulder-blade is flat, those of the ribs elongated, the limbs long, whilst the pastern-bones are short ones.

The junction of one bone with another is known as its

articulation, and these, along with cartilage, ligaments, etc. constitute a *joint*.

As a rule, the joints are closed in by a tough membranous bag (capsular ligament), which at the same time serves to support the membrane secreting the lubricating material or so-called "joint-oil"—a white-of-egg-like fluid, to which it is closely allied. The ends of the bones are covered by encrusting cartilage—the preservation of which is essential to the well-being of a joint. In disease, this is often the seat of ulceration, or removal.

The amount of movement which a joint is capable of executing varies considerably. In some instances, movement is altogether absent or inappreciable. The greatest range of movement exists in the joints of the limbs.

In disease, this power may be lessened, or even lost altogether. This is frequent in injuries to the knee, loins, hock, etc.

It will readily be understood that its gravity depends upon the situation where fusion of bone has taken place.

Ankylosis (stiffening) is the term applied to indicate this abnormality.

It is a matter of common-sense that a horse having a stiff knee (from this cause), or hock, is, so far as real value is concerned, worth but little, whilst a hunter with its back in this condition must be worth still less.

The head of the horse is composed of numerous flattened bones, united together either with plain, saw- or tooth-like edges. The cavities which serve to accommodate the brain, eyes, and nasal membrane, are formed in this way. The same may be said of the air-compartments (sinuses) of the head. These latter contain a reserve supply of air. Both the upper and lower jaws carry six molar teeth on each side of the mouth (twenty-four in all), along with twelve incisors, and sometimes four tusks. The lower jaw is composed of

two bones united together in front, and articulating on each side behind with the back and lower surface of the skull, the extreme hinder part of which articulates with a winged bone termed the *atlas* (6), and the hinder surface of this with the *axis* (7). (See skeleton.)

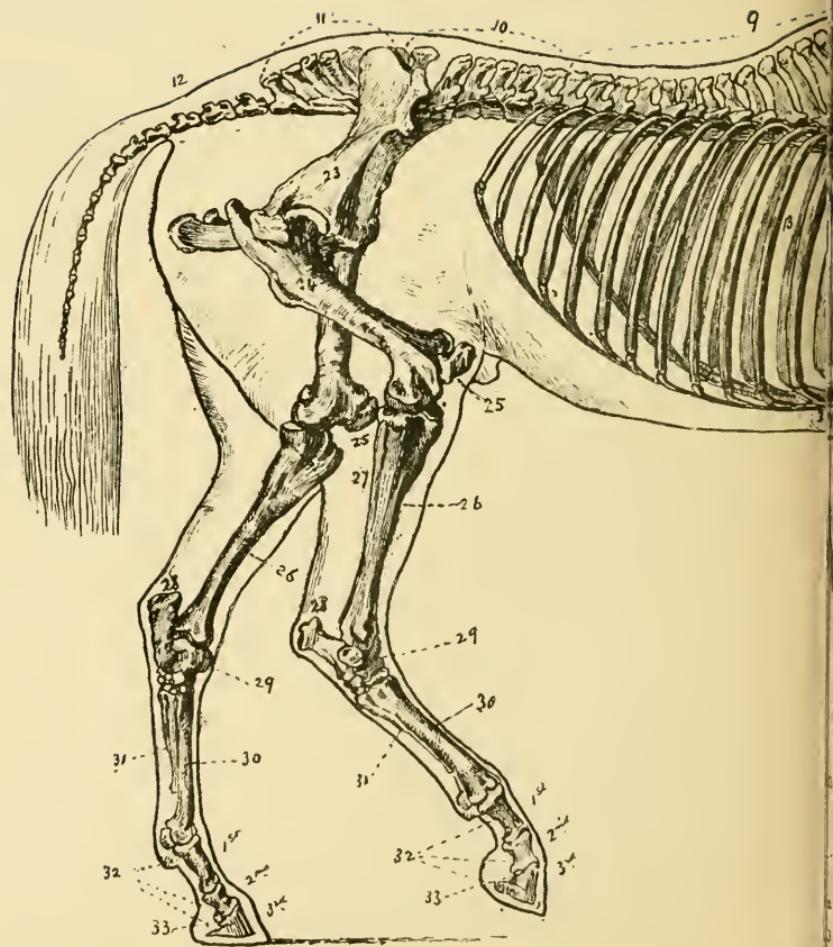
The nodding movements executed by the horse's head arise from the first-named joint, whilst the rotation (side to side) comes from the latter. These two vertebrae, along with the five succeeding ones, together form the *cervical* vertebrae, or neck-bones (see skeleton) (8). Each of these segments has a canal (or rather a portion of such) running through it, serving to accommodate the spinal cord, from which nerves issue, thus establishing a telegraphic communication to every inch of the body.

At the bottom of the neck other vertebrae, with projecting spines, begin, running backwards to the loins. These are the *dorsal* vertebrae (9), and they number eight. They not only articulate amongst themselves, but also with the upper ends of the ribs, by a double joint as a rule. The first dorsal vertebrae joins on to the last cervical, whilst the last is articulated to the first lumbar vertebrae (10), of which there are seven. Following this, we come to the sacrum (*sacral* vertebrae) (11), then to the bones of the tail (*coccygeal* vertebrae) (12), thus completing the segmental rod, throughout which the spinal cord traverses, ending as a thread.

The ribs number eighteen pairs (13), of which the first eight are termed *true*, and the remaining ten *false*.

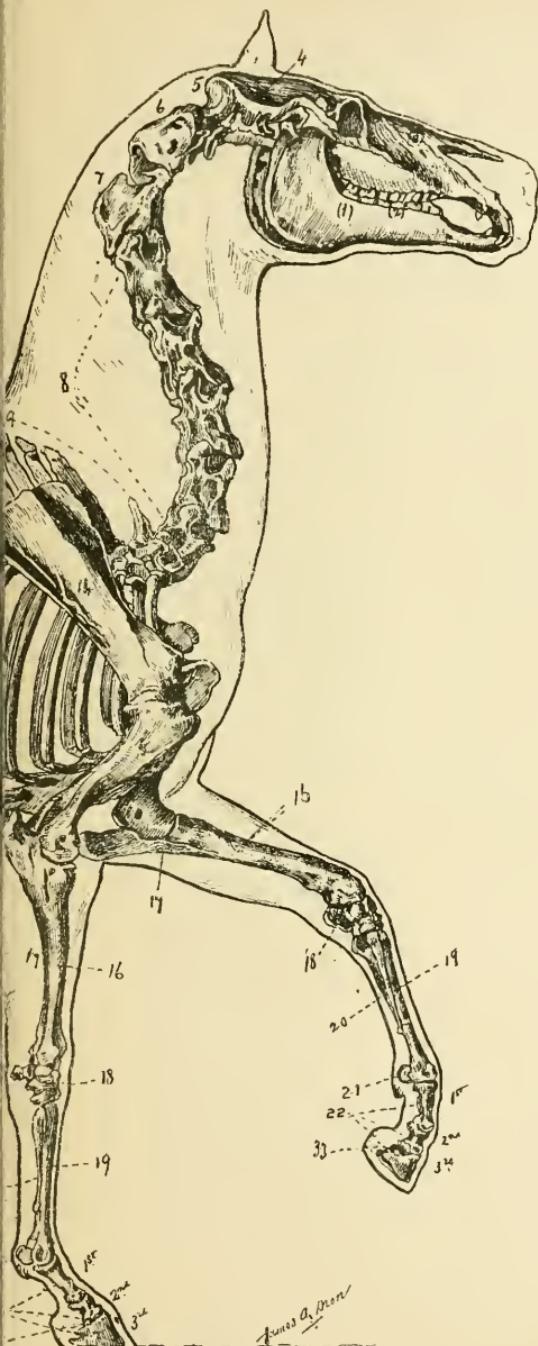
On reference to the skeleton, it will be seen that eight of these articulate with the breast-bone below, hence the term "true." The first rib joins its fellow below.

The breast-bone, or sternum (34) as it is called, is principally cartilage, shaped like the keel of a ship. It forms the floor of the chest, whilst the vertebrae above, and ribs, form the roof and walls.



[To face p. 106.]

SKELETON



1. Lower Jaw.
2. Molar Teeth.
3. Nasal Bone.
4. Parietal Bone.
5. Occipital Bone.
6. Atlas.
7. Axis.
8. Cervical Vertebrae (5).
9. Dorsal Vertebrae (8).
10. Lumbar Vertebrae.
11. Sacral Vertebrae (5).
12. Caudal Vertebrae.
13. Pairs of Ribs (18).
14. Scapula.
15. Humerus.
16. Radius.
17. Ulna.
18. Carpal Bones.
19. Cannon, or large Metacarpal Bones.
20. Splint Bones (small Metacarpus).
21. Sesamoid Bone.
22. 1st, 2nd, and 3rd Phalanges.
23. Pelvic Bones.
24. Femur.
25. Patella.
26. Tibia.
27. Fibula.
28. Os calcis, or point of Hock.
29. Tarsal Bones.
30. Large Metatarsal Bones.
31. Small Metatarsal Bones.
32. 1st, 2nd, and 3rd Phalanges.
33. Navicular Bone.
34. Sternum, or Breast-bone.

One feature worthy of notice in connection with the vertebræ, is the presence of discs of cartilage interposed between the articular surfaces of their bodies. These discs, as compared with man, are much thinner, the erect position of the latter demanding good buffers against the forces of concussion.

The fore-limbs of the horse correspond to the arms of man. In other words, they are homologous structures, though not analogous—*i.e.* they don't perform the same functions. In man, prehension; in the horse, progression. The fore-limbs are not attached to the trunk by bone, being merely slung on through muscle and connecting tissue.

Each fore-limb consists of the following bones, from above downwards:—

Shoulder-blade or scapula (14).

Arm or humerus (15).

Fore-arm or radius and ulna (16 and 17).

Wrist or knee (composed of seven or eight bones, and equivalent to the wrist of man) (18).

Cannon or shin-bone (19), along with two small bones behind (splint-bones) (20).

Sesamoid bones (21).

First phalanx, or os-suffraginis (fetlock bone) (22).

Second phalanx, or coronet bone (22).

Third phalanx, pedal or coffin (22), behind which there is a little bone—navicular bone (33).

The hind-limbs are united to the trunk by ball-and-socket joints—though the union is an indirect one, being with the pelvis, which in its turn joins the back-bone.

The bones to the upper portion of the hind-limbs are much stronger than in the fore ones. As they correspond to the legs of man, it follows that the horse has virtually only two legs (four limbs).

Naming the bones from above to below, they are as follows :—

- Thigh or femur (24).
- Knee-cap or patella (25) (this corresponding to the knee in man).
- Tibia (26).
- Fibula (27).
- Point of hock (28) (corresponding to the heel in the human subject).
- Bones of hock (29) (six in number).
- Large metatarsal bone (30).
- Two sesamoids.
- Two small metatarsal bones (31).
- First, second, and third phalanx and navicular bone.

The pelvic girdle. The bony pelvis is composed of three distinct bones in early life, though subsequent fusion of these gives it the character of one large irregular bone. As each half is made up of three bones, the pelvis, strictly speaking, is an arch formed from six separable pieces (23). These bones articulate immovably amongst themselves, yet form an articular cup for the ball-like head of the thigh-bone. On the other hand, it is only the ilium that articulates with the back-bone (sacrum). The bones are known as the ilium, ischium, and pubis.

The pelvis of the mare is more open than that of a horse.

Reference to the illustration of the skeleton will, we trust, materially assist the reader to plough through the first principles of anatomy.

B. THE MUSCULAR SYSTEM

The skeleton is clothed with flesh—the muscles, which taken collectively constitute the *muscular system*. These

are again divided into the muscles of the trunk and limbs, and those of special parts.

After the skin has been stripped off the dead subject, each muscle can be separated from those adjacent to it. It is the careful separation of these, and blood-vessels, nerves, etc., that constitutes dissection.

Most of the muscles have connecting tissue between, or upon them.

The muscles covering the skeleton are of the striped or voluntary kind, *i.e.* when a fibre is teased out of a piece of muscle, and examined with the aid of a microscope, it shows numerous cross-stripes.

The inherent power of muscular tissue is that of "contractility."

The muscles of the limbs have their fleshy belly above the knee or hock, below which some of their tendinous prolongations run.

It is the absence of flesh below the joints named which renders amputations in the horse and ox objectionable.

The muscular system of the horse is specially well developed. Very large and powerful muscles occur in the region of the back, thighs, shoulders, etc. In kicking, rearing, backing, etc., certain of these muscles are particularly active.

Breathing and parturition are chiefly muscular acts.

C. INTERNAL ORGANS

The cavity of the belly is separated from that of the chest by a flat sheet of muscle, known as the midriff or diaphragm, whilst the prolongation of the belly backwards constitutes the pelvic cavity, chiefly containing the generative (or part) and urinary apparatus (or part).

The principal contents of the chest are the right and left

lungs, heart, and blood-vessels. The apex of the heart inclines towards the left side, on a level with, and just behind the elbow. The gullet passes through the chest, lying behind the windpipe, both being very long in the horse.

The contents of the belly comprise the stomach, intestines, liver, kidneys, supra-renal bodies, pancreas, spleen, blood-vessels, nerves, lymphatic glands, etc., along with part of the urinary and generative organs.

The stomach is small and lies just behind the midriff, communicating with the gullet in front, and small intestines behind. It has three coats, viz. serous, muscular, and mucous. The intestines are divided into large and small. The total length is about 120 feet. The double colon has the largest capacity of any portion of the bowel. The intestine ends at the anus in the form of constricting muscles (*sphincter ani internus* and *externus*). The liver is large and lobed; the spleen triangular, and attached to the greater curvature of the stomach. The latter is commonly called the melt. Its use is unknown. The functions of the liver are mainly threefold—

- (a) To secrete bile.
- (b) To act as a storehouse for starch (glycogen).
- (c) To arrest certain poisons.

The functions of the heart are those of driving blood through the lungs, and then throughout the body. The right side of the heart deals with impure (venous) blood; the left with the blood after it has been purified at the lungs, by means of the atmospheric oxygen. It beats, normally, from 35 to 45 times per minute.

CHAPTER XVI

CONFORMATION AND DEFECTIVE CONFORMATION

The head.—The width of the forehead is a sign of beauty—indeed, in the Arabian, it is one of the four principal characteristics of the breed.

The *straight* head has usually wide nostrils, widely separated ears and eyes, along with fineness of skin.

The *conical* head is a defective one. It is not uncommon in old horses. The part contracted is towards the lips.

The *snub-nosed* head is frequently seen in Shetland ponies. It is often associated with many excellent qualities.

The terms *hare-faced* and ram's head are applied when the forehead and nose respectively show marked convexity. For saddle purposes a large head should be avoided.

The manner in which the head is “set on” is important. It should be placed obliquely, inclined downwards and forwards.

The neck.—The volume of this should be proportionate. Castration diminishes this to a very great extent, hence we see that the neck acquires the greatest degree of development in the entire horse.

It may be *too long* or *too short*.

For the race-horse the last is objectionable, but for draught purposes it is not. A long and muscular neck is desirable in the blood-horse.

The withers.—The withers lie immediately behind the

crest of the neck, above and between the shoulders. The form, elevation, extent, etc., are important matters. They should be well defined.

Coarse, thick, and low withers are defective.

In trotters the withers are usually very "high," though in some "low." Low thick withers predispose to "forging." Again, they render the saddle liable to slip forward and bruise the part, hence frequent galling.

The mane and forelock.—The mane is "single" when the hairs composing it fall to either the right or left side; "double" when falling upon both sides.

Like the mane, the "forelock" may be single or double.

The back.—The boundary of this in front is the withers; behind, the loins; and laterally, the ribs. A good back is a very important matter. The back may be straight, convex, or concave.

The straight back is a good one for all purposes.

The concave, sway, or hollow back is not a good one. It is indicative of weakness, which may be either present at birth, or acquired.

The convex back is bad for both saddle and harness purposes, unless it be for slow work. Such backs are generally inclined to be short.

The back also varies in its length and width. A narrow back is not a good one. It is often associated with a narrow chest. A long back is inclined to be a weak one.

The loins.—A wide loin is regarded as being of excellent conformation. The loins should *always* be short. Low and weak loins are defective. The loins, like the withers and back, are liable to suffer from external blemishes, and frequently from disease of the vertebræ, composing the loins.

The croup.—This region is bounded in front by the

loins, behind by the tail, and on each side by the thighs and upper parts of the buttocks.

A long croup is to be preferred.

In heavy draught animals a short, wide croup is the usual thing.

It is the width which compensates, to some extent, for loss of length.

Brood mares should be wide in the croup.

For driving horses a horizontal croup is suitable, but cavalry horses and hunters should have a croup midway between the oblique and horizontal.

Heavy draught horses should have an oblique croup, whilst in thoroughbreds it ought to be horizontal.

Good muscular development, in this region, is essential.

The haunch.—Bounded below by the flank, and above by the loins and croup.

The haunches should be rather prominent.

Fracture of the haunch is fairly common. It is commonly called “hip-shot.” Passing hurriedly through a door-way, and knocking the haunch against the door-post, is a frequent cause of this injury.

The tail.—Belonging to this we have two parts, viz. the stump, or the fleshy portion, and the hair.

The tail should be “set on” high up on the croup. It will then be well attached and well carried.

A “rat-tailed horse” is one in which the hairs are thinly scattered. It gives the animal an ungraceful appearance; but such horses are said to be always good ones.

Bushy, club, broom, and banged tails are common enough.

The plaiting of the hairs upon the tail is a frequent practice. It is intended to make the quarters look broader, and the loins wider.

In foals the hair of the tail is curly, and in well-bred horses of fine texture.

Nicking and docking¹ are both criminal offences, though the latter is largely practised.

Army horses and mourning-coach horses have the hair upon their tails very long.

The chest.—A wide chest in a draught-horse is very desirable. The muscles on either side ought to be prominent. Depth of chest is even more important. A narrow chest brings the fore-limbs too close together; moreover, it does not allow of the same respiratory capacity. This condition can be either acquired, or the animal may be born with it (heredity).

Height, width, length, depth and plenty of muscle are the four essentials for beauty of chest.

The flank.—The flanks (right and left) are situated behind the ribs.

A well-formed flank shows very little of the hollow. It is seen in well-fed horses.

It is hollow in under-fed or exhausted animals. Too much flank area is a defect.

The abdomen or belly.—This should be proportional in size to the type of the horse. Its volume is increased after food, decreasing as the digestive processes are completed. When small in size, it indicates (unless in race-horses) defective assimilation. A large belly is unwieldy, and it hinders pace.

The ribs.—The proper curvature of the ribs, length, and separation from each other, are the chief points of excellence in connection with these.

Short, flat, badly separated ribs are defects of conformation.

¹ In a recent prosecution by the R.S.P.C.A. against a veterinary surgeon for having docked a client's horse, the magistrates dismissed the case.

The fore-limbs.—We shall limit ourselves to a brief notice of the conformation and defects of these, not because they are wanting in importance, but chiefly because of the illustrations which we have given, reference to which will

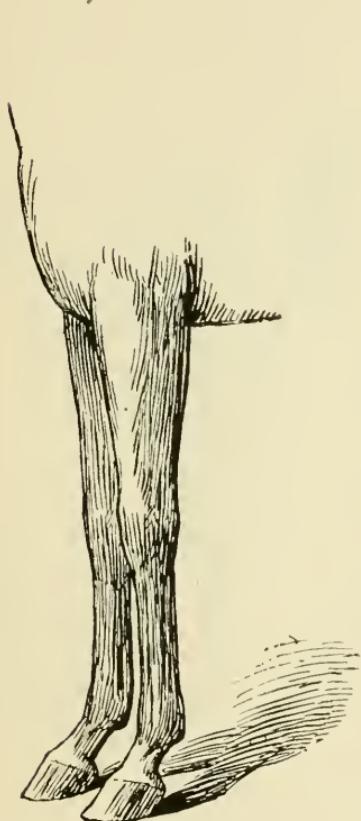


FIG. 1.

WELL-PLACED FORE-LIMBS.

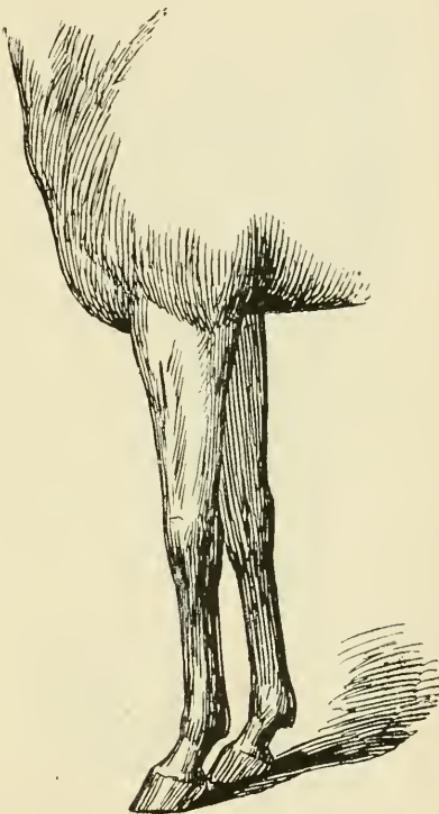


FIG. 2.

CHEST TOO HEAVY, SHOULDER FAR TOO STRAIGHT,
AND LEGS PLACED TOO MUCH UNDER BODY.

be of greater benefit to the reader than an elaborate explanation in the text.

In FIG. 1 well-placed fore-limbs are seen in profile.

A vertical line lowered from the middle of the arm should cut the middle of the hoof below.

FIG. 2 shows the shoulders too straight, chest too heavy, and fore-limbs too much under the body.

FIG. 3. The pasterns are too oblique, and the limbs altogether inclined to be weak in structure.

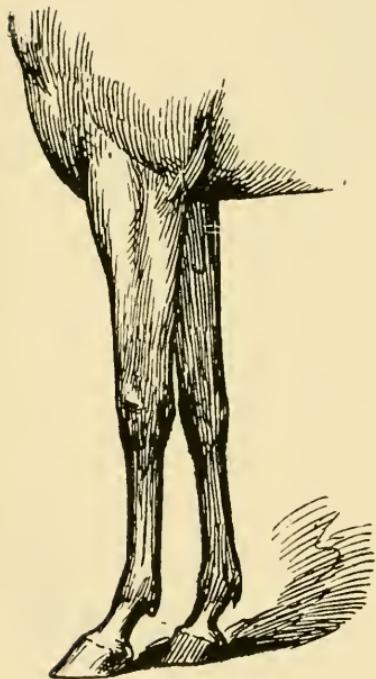


FIG. 3.

BONES OF PASTERNS TOO SLIGHT.

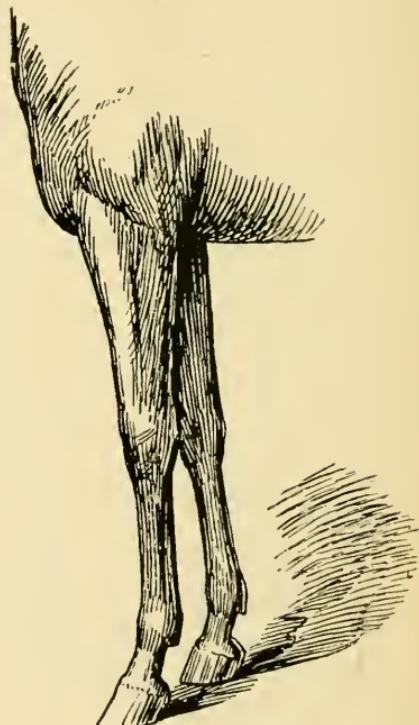


FIG. 4.

UPRIGHT PASTERNS.

FIG. 4. Pasterns far too upright. This is a very objectionable defect, and it may be either acquired (disease) or present from birth.

FIG. 5 shows a break-down horse. The knuckling over is the result of a chronic inflammation of the flexor tendons.



FIG. 5.

KNUCKLING OVER, PRODUCED BY CONTRACTION
OF BACK TENDONS (*Tendinitis*).

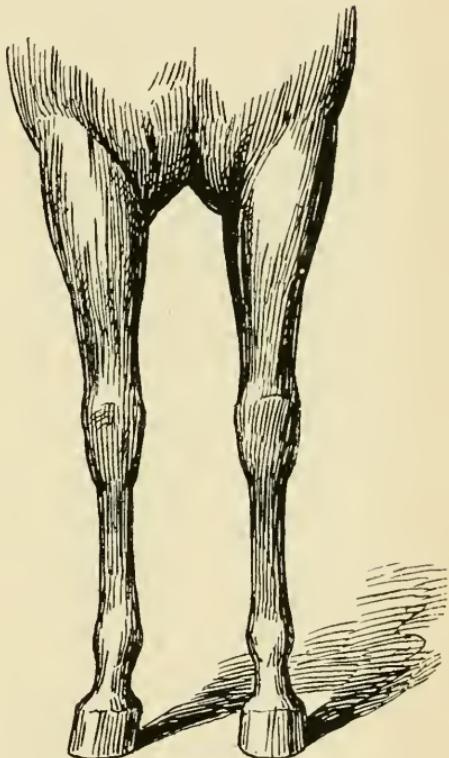


FIG. 6.

TYPICAL FORE-LIMBS,
FRONT VIEW.

Viewed from the front.

FIG. 6. Typical fore-limbs in front view.

A vertical line drawn down from the point of the shoulder should divide the knee, cannon, fetlock, and foot into bi-symmetrical parts.

FIG. 7 shows the limbs too close together, the defect starting at the knees. The toes are turned "in."

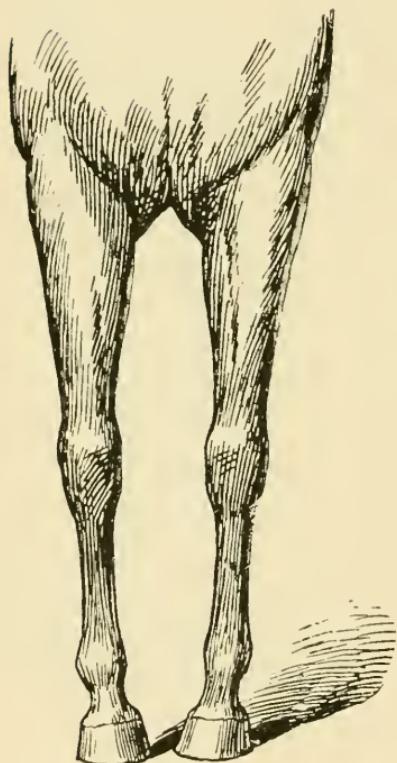


FIG. 7.

LIMBS TOO CLOSE FROM KNEES
DOWNWARDS. TOES TURNED IN.

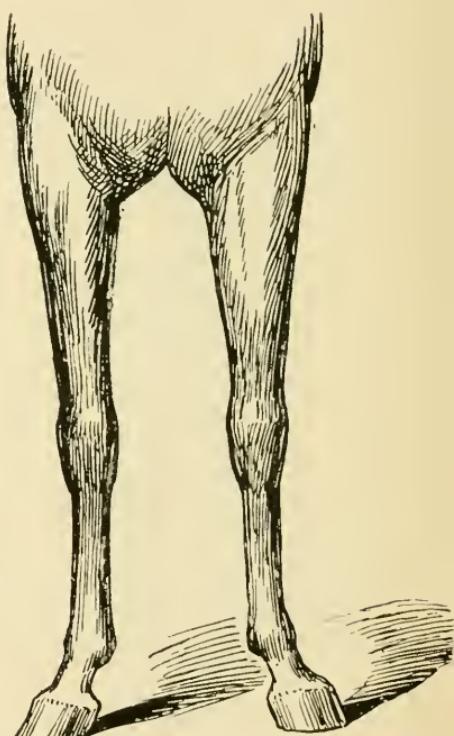


FIG. 8.

LEGS TOO WIDE AT CHEST.
TOES TURNED OUT.

FIG. 8. Toes turned "out," the fore-limbs being set on too wide apart.

FIG. 9. Calf-knee. Convex internally. Outward incline of the toes. A bad defect.



FIG. 9.

CALF-KNEE, SIDE VIEW.

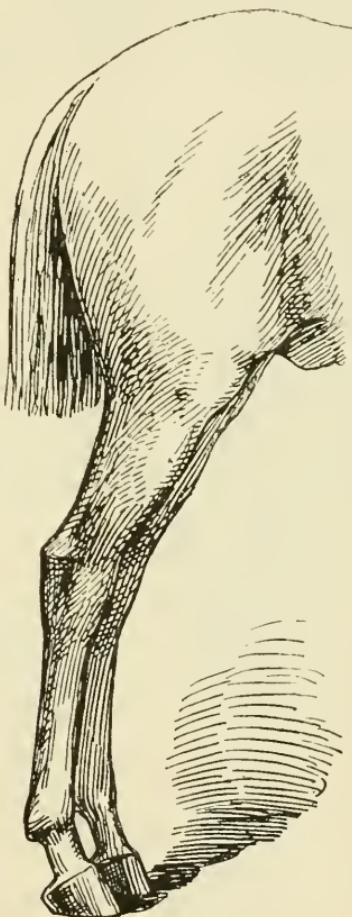


FIG. 1.

WELL-PLACED HIND LIMBS.

Hind-limbs (*profile*).

FIG. 1. The limbs are well placed.

FIG. 2 shows good quarters, but the lower parts of the limbs bring them too much under the body.

FIG. 3. Sloping quarters and legs much too far behind. The term "camped behind" is applied to a horse having this defect.

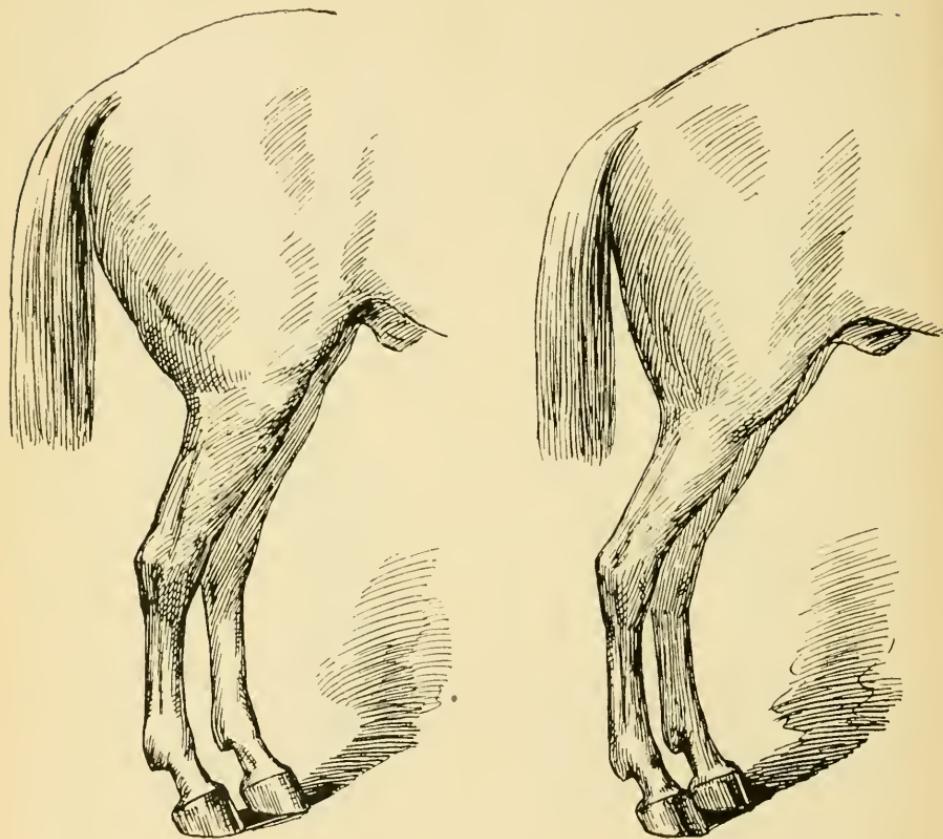


FIG. 2.

GOOD QUARTERS, BUT LEGS TOO FAR
UNDER THE BODY.

FIG. 3.

LEGS MUCH TOO FAR BACK, AND QUARTERS
SLOPE OVERMUCH. (*Goose-rumped.*)

Viewed from behind.

FIG. 4. Typical hind-limbs and quarters. Good hocks.
When a vertical line is drawn from the point of the
buttock, it should equally divide the lower parts of the

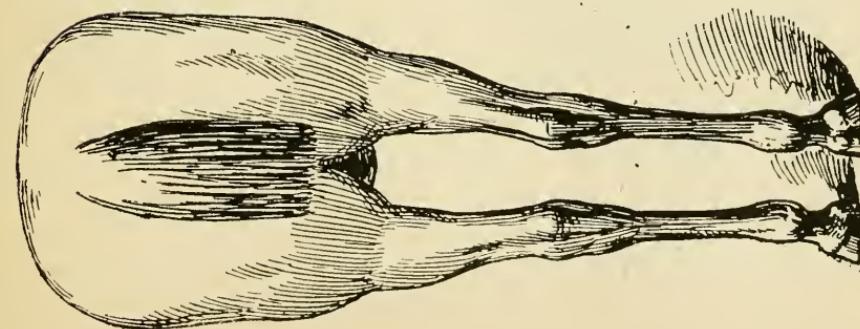


FIG. 4.
TYPICAL HIND-LIMBS,
GOOD HOCKS AND QUARTERS.

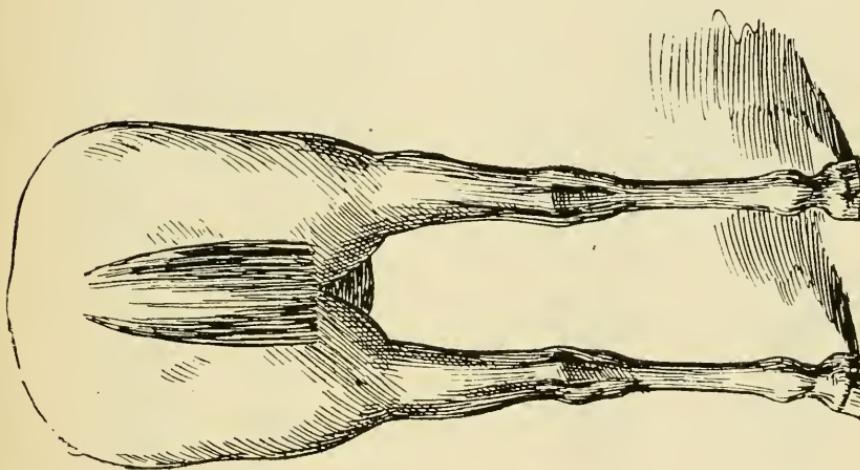


FIG. 5.
HIND-LEGS SHOWING TOO MUCH DAYLIGHT, AND
TOO LONG FROM HOCK TO GROUND.

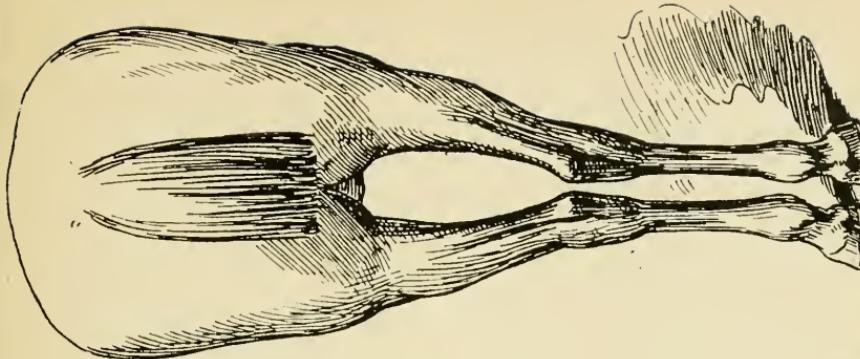


FIG. 6.
COW-HOCKS.

limbs from the hock downwards, and leave an interval between the hoofs just about equal to the width of the fetlock.

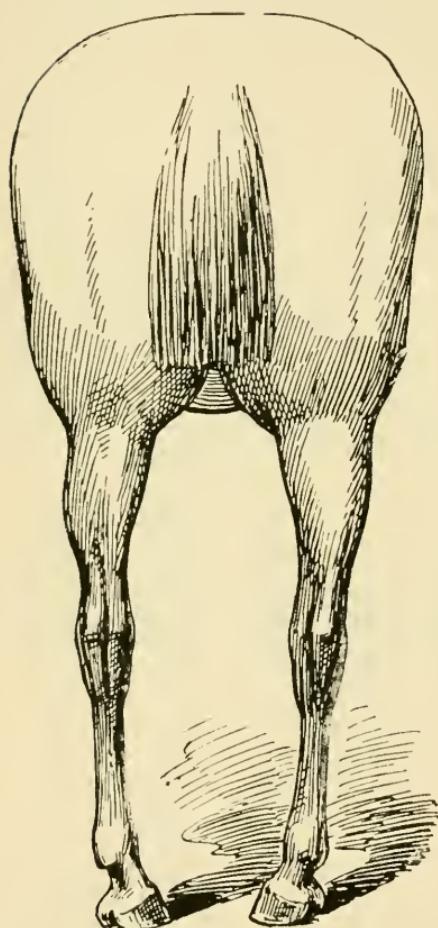


FIG. 7.

TOES TURNED IN, AND LEGS MUCH
TWO WIDE APART.

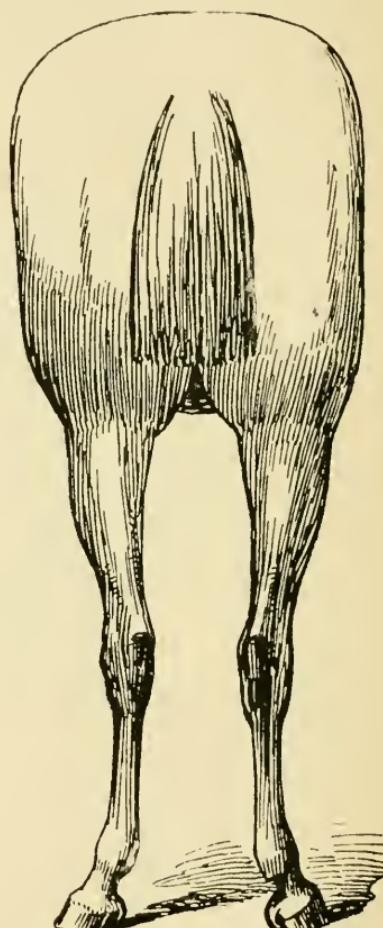


FIG. 8.

TOES TURNED OUT FROM HOCKS
DOWNWARDS.

FIG. 5 shows the horse too open behind, and too long from the hocks to the ground.

FIG. 6. The horse is called "cow-hocked." This is a bad defect.

FIG. 7 shows a bow-legged horse. This causes the horse to have an ungraceful gait and a rocking motion.

FIG. 8. Toes turned "out" from the hocks downwards. Corresponds to the same number in the fore-limb.

CHAPTER XVII

THE TEETH AND AGE OF THE HORSE

THE Mare, in adult life, has thirty-six teeth, whilst the Stallion, or Gelding, has forty. In both, the "temporary" teeth are twenty-four in number. The teeth which appear shortly after (or about) birth are known as "temporary," in contradistinction to the teeth which begin to replace the latter at about two years off (two years and three months), and nominally remain throughout the animal's life, hence named "permanent." At two years, or thereabout, the animal has a full set of temporary incisor teeth, but very shortly after this (exceptionally before) the central incisors are replaced by permanent ones. Thoroughbreds and other horses, arriving at early maturity through environment, have their dentition completed somewhat in advance of animals leading more natural lives.

The teeth in "front" of the upper and lower jaws are known as the *incisors*, those running along the "sides" of the upper and lower jaws the *molars*, and in the male the four conical teeth are termed the *tusks* or *canines*. Sometimes a supernumerary tooth is present, the so-called "wolf's tooth." Its presence is of no importance, though foolishly thought to be so by some—those who know no better.

A tabular statement of the teeth is as follows:—

TEMPORARY TEETH.			PERMANENT TEETH.				
(Male and Female.)			(Male.)				
Incisors	12	Incisors	...	...	12
Molars	12	Molars	...	...	24
Canines, or Tusks	...	0=24		Canines, or Tusks	...	4=40	
Female permanent teeth, 36							

When calculating the age of the horse, the conventional birthday for thoroughbreds and Clydesdales is January 1. All other breeds, May 1. This applies to Great Britain.

TEMPORARY AND PERMANENT TEETH

A typical incisor tooth consists of three parts, viz.—(1) The “crown,” covered by enamel, and projecting above the level of the gum. (2) A constricted portion—the “neck.” (3) The “root” or “fang” embedded in the gum and socket of the jaw, to which it is attached by a nourishing membrane.

The neck is practically absent in the case of the permanent incisors.

Each permanent incisor has a parallel groove running down the front of the crown, which, taken along with its larger size, want of whiteness, and absence of neck, serves to distinguish it from incisors of a temporary nature.

The first, second, and third molar teeth appear shortly after birth, but the fourth not until about nine months, and like the fifth and sixth, which appear about eighteen months and three and a half years respectively, are permanent teeth, whilst the molars (first, second, and third) are replaced in the same manner as the incisors.

The tusks usually appear at four years, becoming fully developed at five years, and slightly worn at six. These four teeth are permanent from the time of their inception.

Reference to the plate showing a permanent incisor, will enable the reader to see that the "table" of the tooth shows a dark mark in the centre. This is the so-called "mark" or infundibulum. It is elongated and surrounded by a ring of enamel (inner enamel ring).

The area in front of the mark is "anterior," whilst that lying behind is "posterior."

Bounding the tabular surface of the tooth, there is another enamel ring (outer enamel ring).

The table is always absent from incisors which have not begun to wear. As the tooth wears away, the mark gradually becomes obliterated, and the table alters in shape from the oval to that of triangularity. If the wear proceeds far enough, the hollow of the fang becomes exposed—the gum receding. This will be seen on reference to the diagrammatic figure shown to the right of the permanent incisor (tabular view).

The use of the incisor teeth is that of tearing the aliment, whereas the molars act much in the same manner as that of a mill-stone.

TEMPORARY INCISORS

At birth, as a rule, none of the incisors have penetrated the gums, but their outline can be distinctly seen beneath such, which is red and congested.

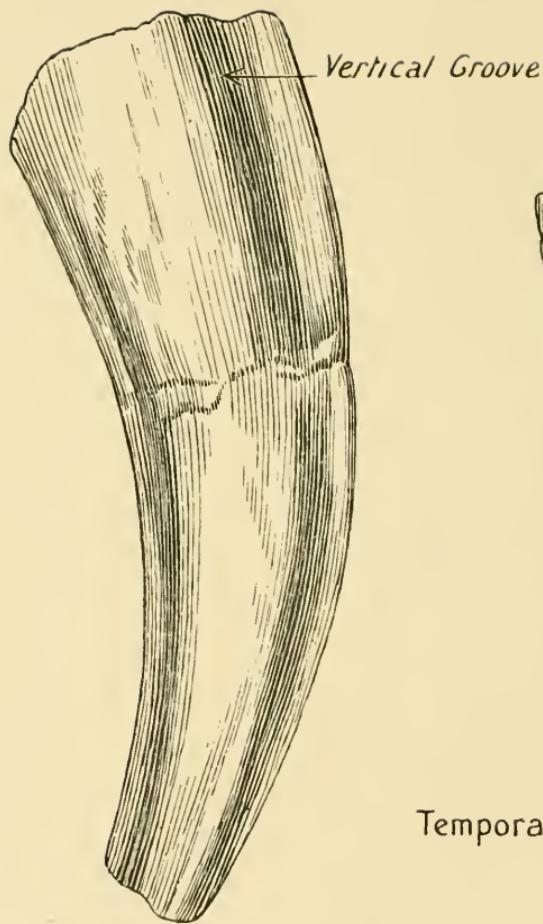
One week.—A pair of teeth occupies the centre of the upper and lower jaws, hence these are termed the *centrals*.

The foal's gait and condition of the hairs upon the tail and mane indicate at a glance that the animal has only recently come into the world.

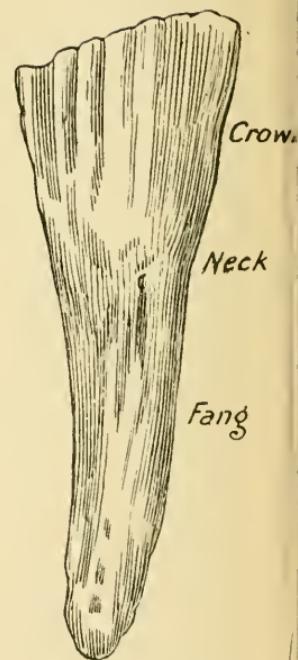
Two weeks.—Centrals well developed.

Four to six weeks.—Another pair in the upper and

*The Mi
Infundib*



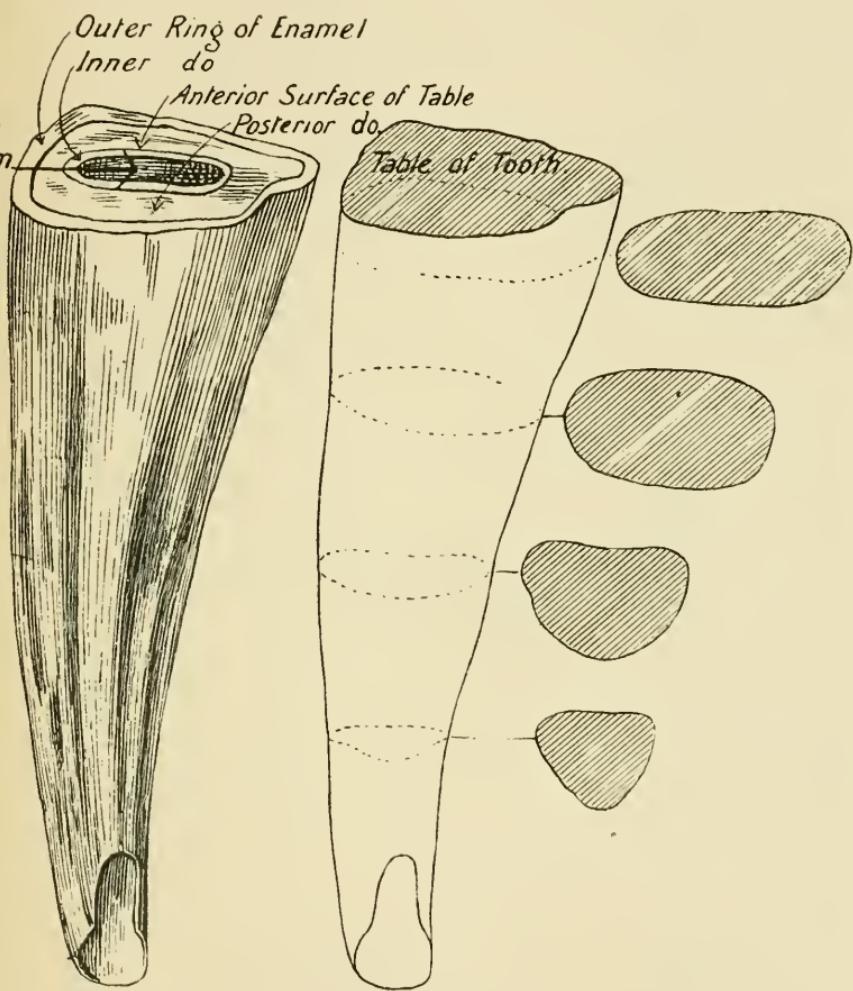
Permanent Incisor Tooth.



Temporary Incisor Tooth.

To face p. 126.]

INCISOR TEETH OF



Incisor Tooth

HORSE

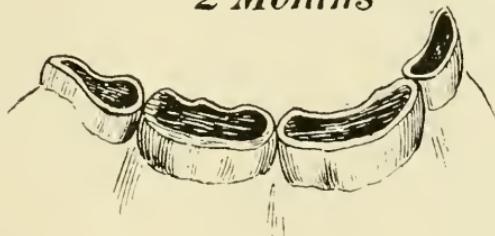
lower jaw usually appear about this period. These are termed the *middles*.

At Birth



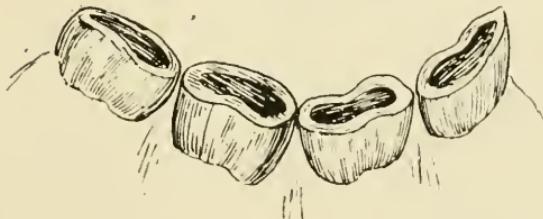
Two months.—The centrals are a little bit worn, whilst the middles are about half-way up.

2 Months



Six months.—The middles are on a level with the centrals, but the tables are not well formed. Mouth

6 Months



has a neat appearance. Sometimes there is evidence of the corner teeth coming through the gum.

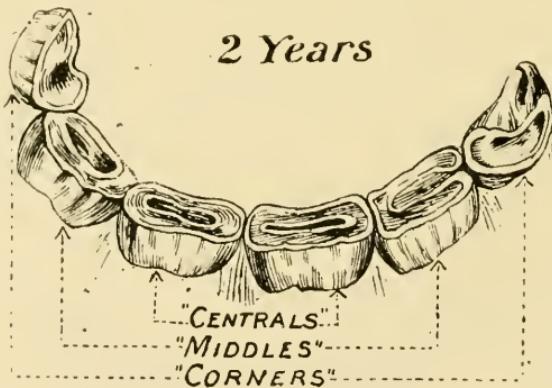
One year.—The corner incisors are on a level with the centrals and middles, but the first-named are but little worn, indeed somewhat shell-like in character.

The yearling has a complete set of temporary incisors, therefore it is not impossible to confound it with



a five-year-old, in which the incisors are, of course, all permanent ones. Again, a yearling might be mistaken for a two-year-old, or *vice versa*. How are we to tell? The matter is easily settled by looking at the molars.

In the yearling the *fourth* molar has just been "cut,"



but in a two-year-old the *fifth* molar¹ will be seen. At these ages the new permanent molars are easily told by their unworn surfaces.

Two years.—Tables well formed, but very often one

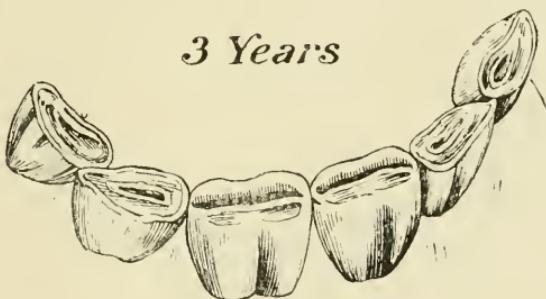
¹ This tooth is usually cut about 18 months.

finds that the posterior (hinder) edge of the corners shows a line of unworn surface.

PERMANENT INCISORS

Two years and three months (two years off).—At this age, there will be seen the shedding of the central temporary incisors, followed by their replacement with a pair of corresponding permanent teeth.

Two years and six months.—When the mouth is closed and viewed from the front, it will be seen that the



permanent centrals leave a gap between their nipping edges. This is very characteristic. The recently-cut permanent incisors are readily distinguishable from the worn, small and white milk teeth on either side.

Rising three years (two years and nine months).—The permanent centrals now touch each other, but as yet there has been no wear, even on the front edge of the teeth.

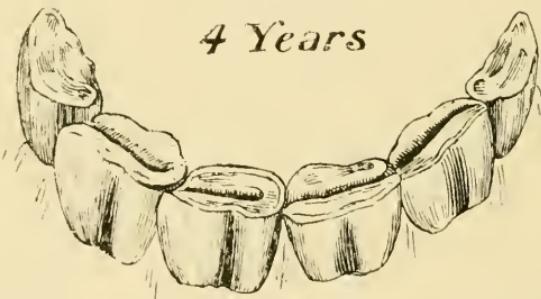
Three years.—The front edge has begun to wear, but the hinder edge is not so much worn. The mark extends right across the tooth. If the tables are "fully formed"—*i.e.* a line of worn surface bounding the central mark—there need be little hesitation in pronouncing the animal as being three years "off" or thereabouts.

Of course, if there is the least evidence that the middles are about to be cast off, the opinion is considerably strengthened.

Three years off.—The same changes are applicable to the middles as happened to the centrals at two years “off.”

Three years and six months.—When the mouth is closed and the incisors viewed in front, the middles leave a gap, *i.e.* these teeth have just grown about half-way.

Three years and nine months (rising four).—The front edges of the middles are in contact when the mouth is closed, but as yet not in wear (virgin). The centrals have by this time fairly well-formed tables. There is a



triangular gap—with the apex of the triangle formed by the opposing inner corners of the middles—included between the nipping edges of the middles when the mouth is closed.

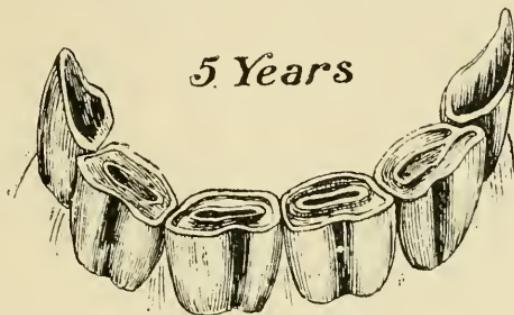
Four years.—A line of wear surrounds the front edge of the middle incisors. The tusks usually begin to make their appearance.

Four years off.—Corners cut.

Four years and a half.—The corner incisors are now just about half-way up when the mouth is closed. There is a gap between.

Four years and nine months.—The front edges of the corners almost touch each other when the mouth is closed.

Five years.—A five-year-old shows the corner incisors touching each other when the mouth is shut.



At this age the corner teeth are mere shells, and this serves to distinguish a five-year-old at a glance.

Further, the tables of both centrals and middles are fully developed.

The horse has now a full set of permanent incisor (and molar) teeth.

Six years.—The front and hinder edges of the corner



incisors show a line of worn structure, but the front edge is more worn than the hinder one.

As a horse may be considered in its prime at six years, the correct determination of age at this period is important.

The inner enamel ring of the central incisors is oval in shape, and the teeth repeat this in outline.

Seven years.—The centrals are now approaching the triangular shape. The hinder edge of the corner incisors has come well into wear.



All the incisors are broader from before to behind than when the animal is six years of age.

The teeth are whiter. When the mouth is closed a notch will be seen in the upper corner incisors.

Further, the mark does not extend so much across the middle teeth as in the case of a horse at six years.

Eight years.—Both central and middle incisors are triangular, and the inner enamel ring repeats the shape.

The "mark" is practically lost through wear. An eight-

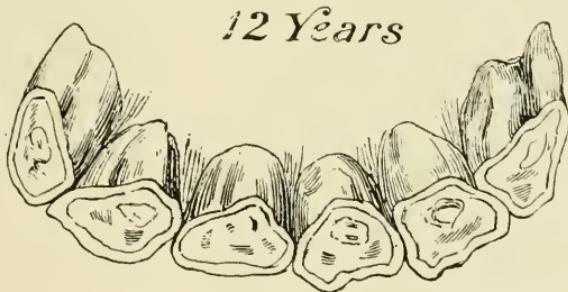


year-old horse could only be mistaken for one at six, seven, nine, or ten. The triangular shape of the inner enamel ring at once distinguishes it from the two first-named. At eight the so-called "dental star" appears.

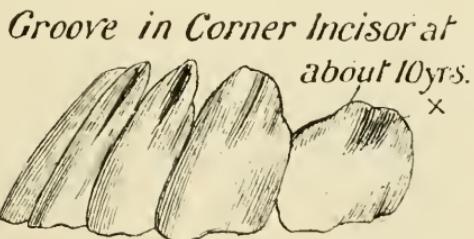
Nine years.—Corner teeth are oval. The upper corner teeth always carry the mark well, so that one must not be misled.



Ten years.—The upper centrals lose their mark, and a groove appears in the upper "corner" incisors.

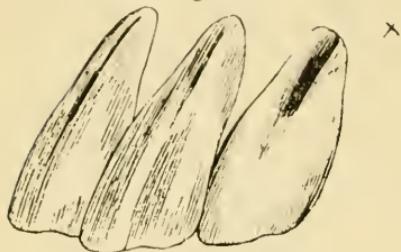


Eleven and twelve years.—The upper middle and corner incisors lose their marks respectively.

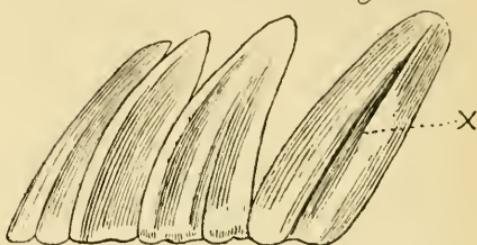


Fifteen years.—The mark upon the outer face of the corner (upper) incisors now extends about half-way down the teeth.

Same, 5 years later



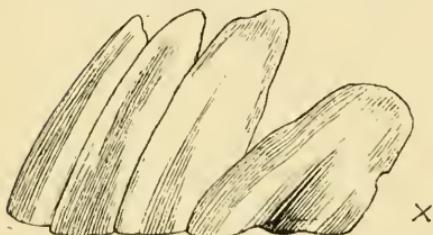
Same, about 20 years



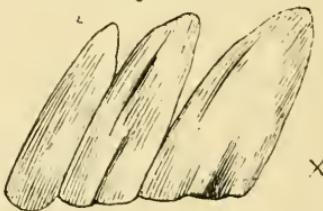
Twenty years.—It extends all the way down.

About twenty-five years.—Groove lost above.

25 years (about)



30 years (about)



About thirty years.—Merely a trace of the groove at the cutting edge.

MOLAR TEETH

About the time of birth the foal has three temporary molar teeth in each jaw (upper and lower). The teeth are known as the *first*, *second*, and *third* temporary molars.

At nine months the *fourth* "permanent" molar is cut, and it is level with the three temporary ones by the end of the year (yearling).

* It is to Mr. S. Galvayne that we are indebted for the method of demonstrating the age by the appearance of the groove upon the upper corner incisor.

Two years.—The *fifth* “permanent” molar is level with the other four, but it is usually cut about **eighteen months**.

Between two-and-a-half and three years.—The *first* temporary molar is replaced by a permanent one. About this time the same change occurs in the second one.

Three years.—The *second* “permanent” molar is now well up.

Three years and six or nine months.—The *sixth* “permanent” molar is through the gum, whilst the *third* temporary molar is replaced by a “permanent” one.

HASTENING DENTITION

Sometimes the temporary incisors are extracted, in order to facilitate the earlier appearance of these teeth.

The cutting of the tusks is facilitated by searing the gum with a pointed iron immediately over the subjacent tooth.

It is, we believe, quite possible to bring a full set of incisors (permanent, of course) into the mouth at four years.

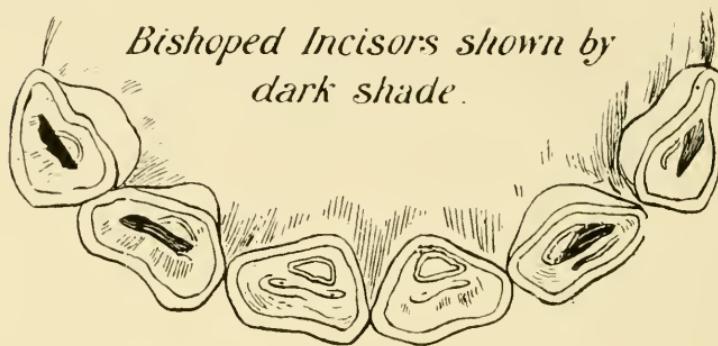
It is often desired—by unscrupulous vendors—to sell a four-year-old for the age of “five” years. How are we to prevent such deception? Examine the molar teeth.

If the horse is about four years, the third and sixth molars will not be worn on their surfaces, indeed they may not be level with the other molars. If this condition be seen, it is the best positive (except actual proof of birth) evidence that one may desire.

Absence of the "proof" must compel one to disbelieve any statements as to the contrary.

Remember the Scottish axiom, that "facts are chiels that winna ding, and darna be disputed."

Whenever examining the teeth, always take care to



make note of both molars and incisors, the latter chiefly in the lower jaw.

Sometimes the notches upon the upper corner incisors of a six-year-old horse are rasped with a view to make the horse appear younger.

BISHOPING

We do not think that this practice is very often resorted to in the present day.

It is an attempt to restore the "mark" in the incisors, which has of course been lost through wear (old age).

None but the most foolish could be deceived by such trickery

If the teeth have been "bishedoped," the ring (inner one) of enamel is wanting.

The middles and corners of the lower jaw are commonly selected as the seats of knavery. Sometimes the inner enamel ring can be traced behind the faked part.

Reference to the illustration will render the explanation of the text easier.

CHAPTER XVIII

STABLES AND STABLE MANAGEMENT

WHEN choosing a site upon which to build a stable, care should be exercised to see that the soil is capable of being properly drained. The depth of subsoil drainage may be from four to twelve feet below the foundation, such depth depending largely upon the nature of the soil.

The foundation should now be laid on concrete.

A gravelly soil, elevated, and a convenient supply of water are essentials.

A southern aspect is desirable.

Try and avoid building in a square, because this plan interferes with the diffusion of air.

Particular attention should be given to the **Ventilation, Drainage, Cubic Space, Water Supply, and Cleanliness.**

We shall now briefly refer to these.

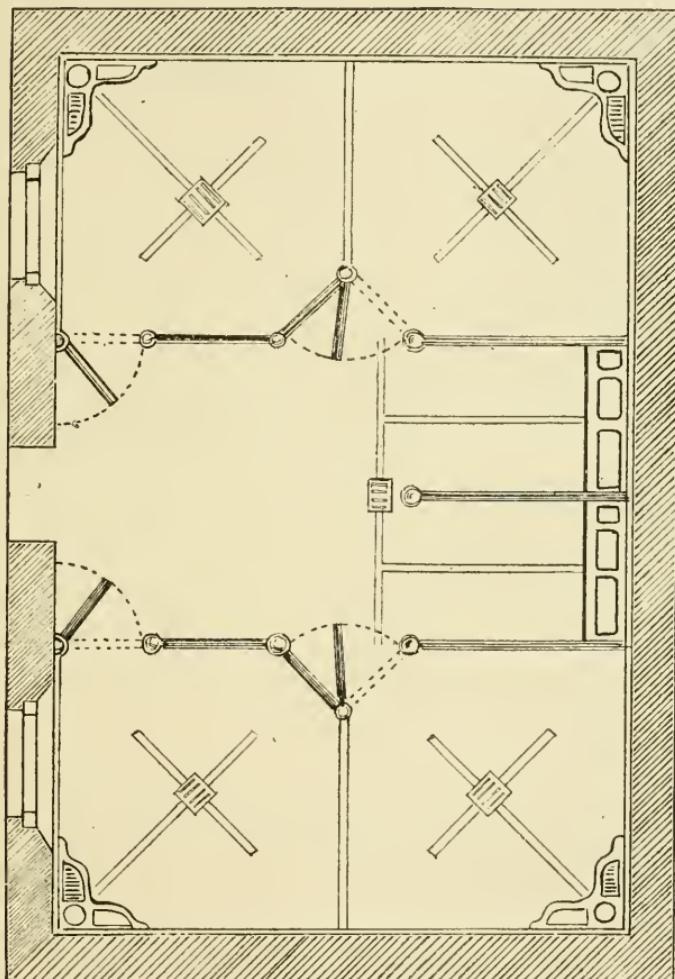
Ventilation.—If a horse is standing in the open air, he takes in about 100 cubic feet of air per hour, subject of course to considerable variation in the amount of air inspired.

Supposing the animal is in the stable, then the amount of air he requires is much greater, in order to ensure the proper dilution of the products of respiration and decomposing animal matter—urine, faeces, etc.

The chief object of ventilation is that of supplying the

animal with a free supply of pure air and expelling the impure.

A vitiated atmosphere is equally harmful to man and beast.



PLAN OF STABLE, SHOWING TWO STALLS AND FOUR LOOSE BOXES.

St. Pancras Ironworks Company.

When animals are suffering from chest complaints, purity of air is an essential aid towards recovery.

The worst forms of disease may be anticipated where defective sanitary conditions prevail.

Ventilation is spoken of as "natural" and "artificial".

Natural ventilation depends upon the perflating power of the wind.

This power can be used to its best advantage by having opposite doors and windows, and the building not more than about ten yards in width.

The inlet of pure air (comparatively so) can be effected by means of perforated bricks, shafts, windows, doors, holes in the wall, etc. Ordinary bricks (when dry), being porous, allow air to pass through them.

Ventilating tubes, with one or more bends in them, diminish the velocity of the wind by about one-half. This is due to frictional resistance.

In large stables a shaft should never be permitted, because it does not and cannot admit a sufficiency of air.

So far as inlets are concerned, there is nothing to surpass Sheringham ventilating windows, which open inwards, thus allowing the air to pass upwards. The windows can be adjusted according to prevailing atmospheric conditions.

The window should be placed just above the horse's head, and about three feet in width by three feet six inches in height. There is no down-draught.

All "inlet" ventilators ought to be made wider on their inner side.

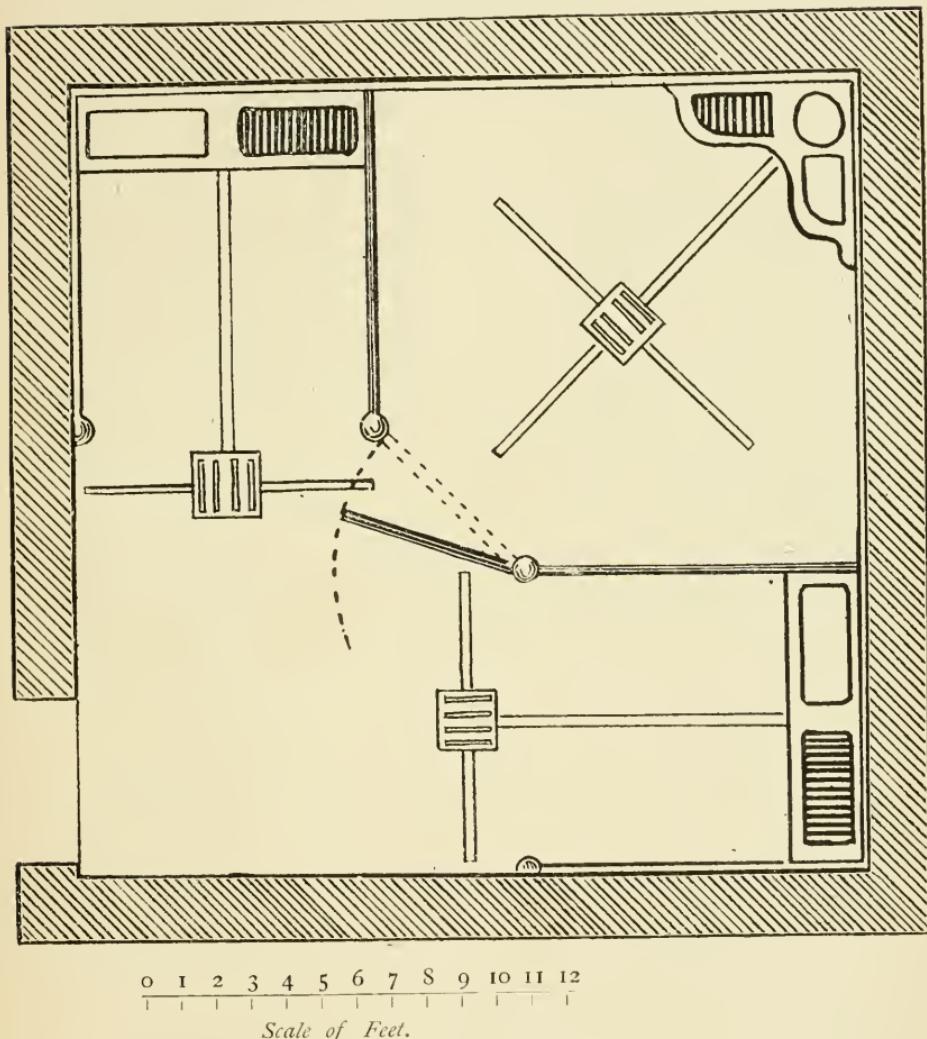
The "outlet" should be placed in the roof.

For this purpose Boyle's air-pump is a suitable appliance.

The wind passes through openings in the cowl, the arrangement of which increases its velocity, producing a constant up-current.

For the ventilation of ships, Boyle's automatic ventilators are now largely used. There is an "inlet" and "outlet" shaft.

Drainage.—For the interior of the building we prefer surface drainage, though this may not be thought tidy.



TWO STALLS AND ONE LOOSE BOX

St. Pancras Ironworks Company.

If so, the surface-drain can be concealed by means of portable iron-grating, the latter being up-lifted daily, and the drain cleansed. The surface-channels can be formed

out of cement, vitrified bricks, or through paving the stalls and stable-floor with Devonshire buff bricks, the broad surfaces of both upper and lower sides each having two longitudinal grooves, so that when the stall has been laid with these bricks there is free surface drainage established. The stall-drains can empty themselves into a channel running the length of the stable, carried some distance away from it, but flowing into a disconnected subsoil-drain, and from here into the main.

Avoid ordinary brick, wood, earth, or cobble-stone paving for a stable.

Cubic Space.—Although large cubic space is desirable in any stable, it will not supplant ventilation. The object of having ample cubic space is to avoid over-frequent changing of the air in a given time—in other words, rendering the stable too cold. The larger the cubic space, the less frequently does it require changing.

Water Supply.—An unlimited supply of pure water is indispensable both for drinking and cleansing purposes.

Good water should be colourless, sparkling, without odour or taste, and free from suspended matter.

The presence of nitrates may cause excessive urination (diabetes), whilst impregnation with lead-salts is liable to produce lead-poisoning (colic).

Cleanliness.—Too much importance cannot be attached to this matter.

The stableman should be compelled to swill the floor daily; during hot weather, twice daily.

The drains ought to be well flushed, and some deodorant used now and again. A pound of copperas and one pound of blue-stone, added to an ounce of carbolic acid and a couple of gallons of water, forms a useful solution for this purpose. A little can be added each time to the flushing water.

Always bear in mind that a drain-trap is only effective so long as it bears the water-seal; indeed its efficacy in times of drought depends upon this.

BEDDING

For this purpose there is nought to surpass wheat-straw. It is superior to that of oat-straw. Peat-moss litter and sawdust are largely used in trade, tramway, omnibus stables, etc. Both of these are, in our opinion, vastly inferior to (though cheaper than) straw. Tan is also used, less frequently, shavings. All these materials hold urine tenaciously, and favour its rapid decomposition.

If horses eat their straw, then any of these materials can be substituted.

Always remove the bedding once daily, picking out the soiled portions, exposing the rest to the air for a short time.

Never dry the bedding in a stall within the same building in which the animals are resident.

It has been found that a pound of moss litter will absorb about a gallon of water.

GROOMING

The objects of grooming are those of getting dirt, dust, scurf, etc., from the skin and hairs, likewise for the production of a glossy coat.

The hair follicles (pits from which the hairs spring) have lubricating gland-secretions poured into them, and the

distribution of this material over the coat acts as a natural protective against rain, etc. Daily shampooing with a dry wisp is beneficial ; in fact, it is the correct way to dry a wet horse.

If the animal begins to sweat again after being dried the process must be repeated.

Supposing that the horse is sweating after it returns home, it must be either walked about, dried, or else well clothed before being allowed to rest. Washing a horse (unless disease of the skin demands it) is certainly a bad practice.

The dandy-brush should be energetically used, taking care to rub in the direction of, and across the hair.

Particular care must be exercised when cleaning the mane and tail. Part the hair and use the brush freely.

Horses having a tendency towards sore shoulders, or sore backs, should have the collar, or saddle, kept on for about an hour after the animal has been put into the stable. This is the best preventative.

If the legs are washed, then the groom must be made to dry them properly, otherwise the horse will soon have cracked heels, etc. If the legs cannot be thoroughly dried and afterwards bandaged, then by all means allow the mud to dry on, subsequently brushing it off. The curry-comb is for cleaning the brush.

Some owners do not clip the hair off their horses' legs during the damp weather, believing it acts as a protective against skin congestion in this region.

Hunters should have the lock of hair left at the point of the fetlock.

CLIPPING

Warm stables and heavy clothing obviate the necessity of clipping horses, as these conditions prevent the animal from losing its fine summer hairy covering.

Once a horse is clipped, the operation requires repeating, though the clipping spoils a horse's coat. Singeing the long hairs of the belly, under the jaw, thighs, etc., is often practised, whilst another portion of the body is clipped. The common objection to clipping is the increased risk of catching cold immediately afterwards. This can be overcome by clothing the body carefully for the first few days afterwards. A heavy coat certainly causes the animal to sweat under exertion—consequently a loss of flesh.

It has been said that to clip a horse is equivalent to giving it an extra pound of corn per day.

After clipping, the bodily temperature rises.

PASTURING, SOILING, AND SUMMERING

The first term means turning a horse out to graze; "Soiling," placing the animal in a loose box and allowing soft food; whilst "Summering" is applicable to Hunters under either of the foregoing conditions.

We believe that it is an excellent plan to turn a Hunter out for six or eight weeks, provided the weather is favourable, and at the end of this time bring the animal up, and either put him in a loose box or else a small paddock, giving him a daily allowance of corn.

Before turning a horse out to graze, he should have green food daily, the body-clothing, if such be worn, removed,

and the temperature of the stalls gradually lowered to that outside. If the feet are good (not brittle), remove the fore and hind shoes.

At first the change of diet may cause looseness of the bowels, but provided that this be not excessive, it will be beneficial rather than otherwise.

About the 1st of September is the time to begin preparing the Hunter for hard work. Daily exercise must be given in order to get the animal "winded." Neglect of this precaution frequently leads to congestion of the lungs.

Harness horses, heavy draught animals, etc., are benefited by a six weeks' run at grass every summer, and we commend this practice to all horse-owners.

WINTERING

The practice of turning horses and colts into straw-yards is a very common one. Very often, however, these places are nothing more nor less than manure-heaps. We have often wondered how, in the name of all that is rational, the occupants of these yards could exist at all! It is quite common for one to go into these places and sink up to the knees in filth. Nothing could be more favourable towards ill-health, no matter however vigorous be the constitution. A well-sheltered and clean dry straw-yard is, in our opinion, suitable for winter quarters, provided the weather be not excessively cold. For colts it is an excellent plan to follow.

EXERCISE

Hacks and harness horses when not in use should have at least a couple of hours' exercise each morning.

Heavy draught horses ought, when possible, to be allowed out for half-an-hour or so each Sunday morning.

In this way the so-called "Monday-morning disease" can be avoided.

For Hunters, allow a couple of hours' exercise each morning, taking note that this is not cut down to half the time.

Moderate exercise, good grooming, and old beans, afford the best means of getting a Hunter "fit."

Avoid galloping exercise for some few days after the horse comes up from pasture.

CHAPTER XIX

FOODS AND FEEDING

THE food given must be wholesome, clean, sufficient in amount, and given at regular intervals.

The amount and nature of the food requires regulating in accordance with the work to be performed.

It has been found that hay and straw pass out of the stomach quicker than oats.

Supposing that the first-named be given before the oats, it (the food) arranges itself in the stomach according to the order of entry.

While hay appears to pass out of the stomach—during the beginning of digestion—quicker than oats, towards the close of the digestive process the order is reversed. When giving a mixture of foods (chaff, oats, hay, corn, etc.), it has been found that the different foods still kept mixed within the stomach; further, that they passed into the bowels together, though the one containing the most liquid passed into the bowels first.

This shows us that it is not a good policy to mix foods having differences in their digestibility, because some of the matter of one food may not have been prepared in the stomach for absorption.

Never feed a horse just before working it. There is no surer method of producing broken wind. Avoid giving the animal water just after feeding. This helps to hurry the food away far too quickly from the stomach.

Feed about one hour before work. If this latter is inconvenient, do not give the food until the animal returns from such. Avoid the use of bulky food at all times, especially if the horse has to be worked immediately after feeding.

During fast work the stomach ought to be as empty as possible.

Avoid sudden changes of diet.

Beans added to oats give the most highly nitrogenous food a horse can have. It is an excellent plan to give bran on Saturday nights, and this along with chaff and a little green food, etc., over Sunday.

Never give heavy feeds after severe work on the supposition that a large amount of food will supply the lost energy.

The amount of food for a dray-horse doing heavy work should consist of about 13 lbs. of oats; 6 lbs. of beans; 3 lbs. of maize, along with about 15 lbs. of chaff (clover). Peas can be substituted for the beans and maize. A daily allowance of green food when obtainable does good. On Saturday night and Sunday a bundle of green tares can be given to each animal. Roughly speaking, the cost of feeding a horse according to the above would be about a pound a week.

About 10 lbs. of oats and 12 lbs. of hay per diem is sufficient for almost any horse doing daily work.

GRASS, HAY, OATS, BEANS, PEAS, MAIZE, BRAN, GRAIN ROOTS, ENSILAGE, CHAFF, ETC.

Grass.—There is only one British species of grass said to be harmful, and this is the Darnel (*Lolium Temulentum*).

Horses are unable to perform work on a grass diet only.

Its action is slightly diuretic and laxative. It requires about 18 lbs. of grass to equal the nutritive value of 5 lbs. of hay.

Grasses grown upon sewage land cause, in some instances, scour, etc.

The value of a grass crop is largely influenced by the soil upon which it is grown.

Hay.—The best hay is that at one year, provided it has the other necessary qualities. At this age, it has a greenish tint, sweet taste, and is pleasantly aromatic.

It should contain a mixture of timothy, crested dog's-tail, perennial rye, poa grass, etc.

Hay of middle quality is brittle, and perhaps dusty. The grasses are short, coarse, and it gives but a poor aroma, whilst bad hay is dusty, dark-brown or blackish in colour, often mouldy, coarse, practically juiceless when chewed.

Old Hay is distinguished by its colour, or else by drying.

Musty hay, mow-burned, or dusty hay, should never be used as food for horses.

When grass has been cut for hay-making, it ought to lie as short a time as possible on the ground. The second, third, or fourth day is a good time for carrying it.

Clovers, etc.—These artificial grasses contain, on an average, about eighty per cent. of water. The red, white, and alsike clovers are the best. Vetches make excellent adjuncts to the ordinary food, especially for sick animals.

Beans.—Two or three pounds of these can be allowed daily for a horse in hard work. They should be split and one year old at least. Good beans are rather hard, have a pleasant odour, and should be fat and round.

They are rather constipating.

Peas.—Like the last, these contain a large proportion

of nitrogenous material (22·4 per cent.). It is the field-pea that is used for feeding horses.

Bran.—Good bran has a pleasant odour. When rubbed in the hands it should whiten them. Its feeding value is enhanced by mixing it with other substances. Contains about fifty per cent. of carbo-hydrates. For sick horses it makes an excellent mash, acting as a gentle laxative.

Oats.—To be of A1 quality, oats should be about one year old, hard, plump, free from dust, and weigh about 40 lbs. per bushel. The last-named is an important indicator as to their value.

New oats are not fit to give to horses.

Oats should be given crushed, being easier of digestion ; therefore more profitable.

For race-horses and hunters about 16 lbs. of oats per day are given ; army-horses, 10 lbs. ; cart-horses, 12 lbs. ; hacks and harness-horses, 10 to 12 lbs.

Fumigated oats are such as have been tampered with for improving their appearance. By rubbing in the hands, a smell of sulphur-gas will be perceived.

Maize.—Is used as a substitute for oats. It is largely used. Should be crushed before using.

Wheat.—As a food for horses, it is even dangerous. We have known many cases of fever in the feet arise through its use.

Potatoes.—These are good for fattening, when boiled, and mixed with chaff.

Linseed.—An excellent adjunct to the food, now and again, especially for sick animals.

Chaff.—It is more economical to give chopped hay, and such is preferred by many of the leading proprietors.

CHAPTER XX

HORSEMANSHIP, HORSE-TRAINING, ETC.

HORSEMANSHIP

AS an exercise, there is nothing to surpass that obtainable in the saddle. The whole system is more or less exercised without the fatigue consequent upon almost every other form of exercise. The trot, the canter, and gallop afford a means of giving pleasure alike to the young, middle-aged, and old. It may be asked, can the art of riding be properly acquired without the aid of a riding-master? Yes, any one can learn to ride without being schooled into it, but be it remembered that such self-taught horsemanship may be of the crudest kind.

We are well aware that some of the finest horsemen in the country have acquired the art of equitation themselves, but opportunities and capacity for such must have been present before this degree of perfection could be thus obtained.

As a rule, regular cavalry soldiers are excellent horsemen, simply because their constant practice and schooling has taught them to know the why and wherefore of the various movements both of horse and rider.

It is of the utmost importance that the rider should secure the proper seat, because, if not, he cannot use his hands or legs to the best possible advantage.

Riding without a saddle is not of much benefit to the learner.

A quiet, steady, easy-going horse should be used for the early training.

Use the snaffle-reins only to begin with, and take one in each hand, at equal length.

The saddle should be of an English pattern, and made to fit the back.

It must be long enough to give the rider an easy seat, but the tree must not be too short.

Lessons in both riding and driving are given at the various schools throughout this and other countries.

TRAINING

This has already been referred to in the Chapters on the Hunter, Steeple-chase horse, Pony, etc.

Professional breaksmen are those most suitable for breaking a horse in for harness purposes, because they have all appliances necessary. The main principle of breaking either for saddle or harness is that which aims at gradually accustoming the timid animal to take no alarm at strange sounds or objects.

The bridle must fit properly. A snaffle-bit may be used. The collar should open at the top. Don't use blinkers. The driver must be seated high up, and a break is to be preferred for safety.

For double harness, the horse should at first be driven with a steady companion.

CHAPTER XXI

TREATMENT OF SICK HORSES

Feeding.—During the summer months a small amount—unless contra-indicated—of green food ought to be given night and morning. This acts as a natural stimulus to the bowels.

Linseed gruel, milk, steamed crushed oats, wheaten flour gruel, carrots, either boiled or raw, all form admirable articles of diet for a weakened digestive apparatus. Whatever food is given, the main thing is to give it often and in small quantities.

Never leave food before the animal under these circumstances.

Eggs beaten up with two or three quarts of milk are sometimes very beneficial.

In every instance allow pure water—freshly drawn, and always give it cold (never warm).

The Twitch.—This is a simple appliance for restraining the horse during certain operations and the administration of medicines.

A stout broom-handle, about two feet ten inches in length, is suitable.

Bore a couple of holes through one end, through which a thin piece of cord is looped.

The twitch is commonly applied to the nose, but it can be used upon the ear, or a little above the front of the hock, according to the purpose for which it is applied.

The Cradle.—This is an appliance for placing around the neck in order to prevent the animal biting at a blistered surface, or some other part capable of damage by the teeth, after operation.

A simple form of cradle is made from a number of spindle-shaped pieces of wood, looped together in the form of a broad collar. The spindles are kept apart by other small, but shorter cylinders of wood.

Administering Medicine.—For this purpose we prefer a large-sized soda-water bottle, with the twitch upon the nose, and a strong arm to support the head well up with this appliance. Give the medicine slowly, standing on a stool at the near side of the head.

Never stand right in front of the animal, otherwise you expose yourself to the danger of having a blow delivered with the animal's fore-limbs.

Don't be in too great a hurry to rush the liquid down the throat, otherwise it may have a much wider berth—*i.e.* the floor.

Balls ought to be always delivered with the hand, having the arm bare. Avoid the use of balling guns.

Withdraw the tongue very gently with the left hand, and slip the ball quickly on to the back part of the tongue. Now close the animal's mouth and watch for the ball passing along the gullet.

Never humbug a horse by repeated efforts to give it a ball. If you fail to do it after two or three times leave it alone. Give powders instead. These latter can be mixed with the food, or, if soluble in water, *e.g.* potash, soda, etc., add them to this liquid.

An electuary is smeared inside the cheek or along the molar teeth. It is a capital way of giving some medicines.

The Pulse, and how to take it.—Each beat of the heart sends a jet of blood into the arteries, causing their

elastic walls to rise and fall. This is the pulse, and we can feel it upon any moderate-sized artery capable of touch through the skin with the fingers, but the most convenient one for this purpose is that situated at, and beneath, the sides of the jaw.

By standing on the near (left) side of the animal's head, and placing the second finger of the right hand beneath the jaw under the cheek, the artery will be felt. If one rolls the finger about a little, it will be found to come to rest upon the vessel. Delicacy of touch is essential for the full appreciation of pulse-beats. Excitement must be avoided, and the head kept perfectly still for a quarter of a minute, which multiplied gives the number of beats per minute.

In health the number of pulsations for the adult horse is from 36 to 45.

In some diseases it may be beating at the rate of 120 per minute, while in "pouched" heart it has been found as few as 14 per minute. During fever, 60 and 80 pulsations per minute are quite common.

A matter of greater importance, however, is that of "character," *i.e.* the sensation imparted to the finger and senses.

For instance, the pulse may be "full" (round), "small," "hard," "wiry"; "regular," or "irregular," in time and number; "intermittent," *i.e.* missing a beat or several beats at intervals of regularity or irregularity, and so forth.

In influenza the pulse is always "weak."

During an attack of pleurisy it is at first "quick," hard, and jarring; later on (effusion stage) small and fluttering.

Inflammation of the bowels is marked by a small, quick, and wiry pulse.

In opium-poisoning the pulse is slow. The same occurs in some other brain-affections.

The Temperature, and how to take it.—The registration of the bodily heat affords a valuable means of marking the rise and fall of fevers, likewise the thermometer can be advantageously employed to notify the incubative phase of certain specific (germ) diseases, such as glanders, tuberculosis, anthrax, etc.

During an outbreak of glanders the thermometer proves itself an invaluable guide. For instance, apparently healthy animals may be inoculated with the glanders test-material (mallein), when, if the disease is present, the thermometer at once indicates this through a rise of its mercury.

The instrument used for these purposes is known as a Clinical Thermometer. It consists of a very small cylindrical glass tube, the "bulb" of which is filled with mercury. Running throughout the stem there is a very fine bore, so as to allow the mercury ascent and descent. Detached from the main column of mercury there is a little rod of the same metal. This is the "index," or "register." Were it not for this little rod it would be impossible to gauge the body-heat with any pretence to accuracy.

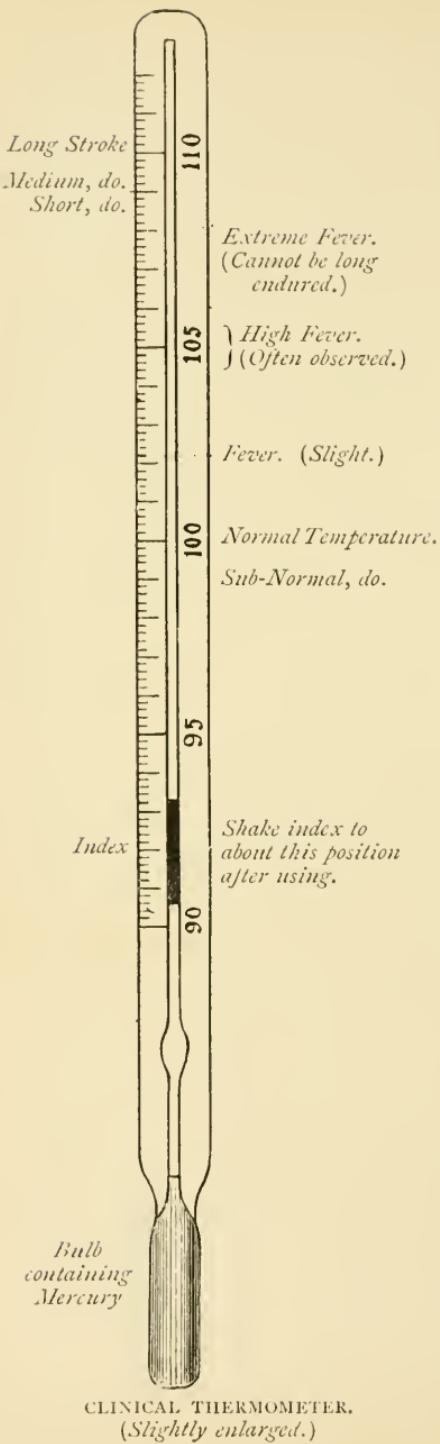
The stem bears three different lengths of strokes, viz. long, medium, and short.

Opposite to the first-named we have the figures 90, 95, 100, 105, and 110, which indicate the number of degrees upon the scale of Fahrenheit.

Between each of these numbers we find four "medium"-length strokes, meaning the same thing. Supposing that the tip of the index touched the first medium-length stroke after 100, then it would imply a temperature of 101° F. Lastly, the "short" strokes, situated between those of medium length.

Each short stroke has the value of two-tenths of a degree ($\frac{2}{10}$ ths).

Let us assume that the index rises to the first short



strokes after 100. This would imply a temperature of $100\frac{2}{10}$ ° F. (*i.e.* $100\frac{2}{10}$ ths). If to the second short stroke, $100\frac{4}{10}$ ° F.; to the third stroke, $100\frac{6}{10}$ ° F.

Again, supposing the index ascended up to the first medium-length stroke after 105, and then to the third short stroke after the medium-length one; then we should say that the temperature was one hundred and six, *plus* six-tenths Fahrenheit, expressed briefly thus— $106\frac{6}{10}$ ° F.

The way to use the clinical thermometer is by taking it in the right hand, grasping the stem with the fingers, knocking the ball of the hand against the knee so as to bring the index to 95, or thereabouts. Now raise the tail with the left hand, and quietly insert the bulb, and about an inch of stem also, into the rectum, keeping hold of the extreme tip of the stem with the right-hand fingers. Allow it to remain here for two

or three minutes,¹ and on withdrawing it note where the "index stands." This gives the temperature of the body.

When the horse is in perfect health, its temperature should be 100° or 101° F. Anything above 102° F. indicates sickness. Towards death the body-heat may fall.

A temperature of 103°	implies slight fever.
" " 104°	moderate ,,
" " 105·6°	high ,,
" " 106° to 108°	very high ,,

The latter temperature could not be long endured.

Common abnormal temperatures are—104°, 105°, and 106°, with their intervening fractions of degrees, though less frequently above the last-mentioned number. Temporary high temperatures are commonly found after exercise.

Always remember to cleanse the thermometer after using it, and mark the temperature down for future reference. Use the instrument at the same hours morning and evening, the latter being naturally a little higher.

Breathing.—When the horse is allowed to stand quietly in the open air, it will be observed to be breathing at the average rate of twelve times per minute.

Exercise and excitement quicken this.

Disease may do the same, or the very opposite. For instance, the respirations are very "shallow" in some brain-affections, or when an animal is in danger through the prolonged use of chloroform, while in pulmonary or lung apoplexy they are quick, almost uncountable. In lung-affections, during hot weather, the breathing offers little means, in our opinion, of guidance as to the progress of disease. When the organs of the chest are diseased, the animal calls into play all the muscles possible, in the region of the belly. On the other hand, disease within this latter

¹ Some clinical thermometers will register in about 20 or 30 seconds.

makes the animal use the muscles of the chest to the best advantage.

LOCAL AUTHORITY AND CONTAGIOUS DISEASES

The diseases of the horse now legislated are—

Glanders and Farcy.

Rabies.

Anthrax.

Sarcoptic Mange. (Shetland Isles only.)

When the owner of an animal has reason for suspecting the presence of any of the three first-named diseases, he must notify the fact to the nearest Local Authority.

In the case of Rural Districts it may be the police-officer.

Failure to do this renders the owner liable to fine or imprisonment, usually the former.

In every instance, we would advise immediate notification to the authorities, otherwise the lives of attendants may be endangered, and the disease spread to other animals.

COMMON DRUGS AND THEIR DOSES

NAMES OF DRUGS.	FOR WHAT PURPOSE.	DOSE AND HOW GIVEN.
Powdered arsenic ...	For skin affection and wind	2 to 6 grains (in food).
Fowler's solution of arsenic	,, ,,, ,,	1 to 2 tablespoonfuls (in water).
Laudanum	To allay pain and straining	1 to 2 ounces (in water).
Tincture of belladonna	For colic, cough, etc.	3 drachms (in water).
Extract of belladonna	For lockjaw, colic, etc.	$\frac{1}{2}$ to 1 drachm (in a ball or electuary).
Creolin	For flatulent colic ...	$\frac{1}{2}$ an ounce (in water).
Prepared chalk	Indigestion	$\frac{1}{2}$ an ounce (water or food).
Chlorodyne	To allay pain	$\frac{1}{2}$ an ounce (in water).
Sweet spirits of nitre	As a diuretic and stimulant ; in fever, colic, etc., etc.	1 to 3 ounces (given in water).
Sulphuric ether	,, ,,, ,,	,, ,,, ,,

NAMES OF DRUGS.	FOR WHAT PURPOSE.	DOSE AND HOW GIVEN.
Chlorate of potash ...	For sore throat, fever, etc.	$\frac{1}{2}$ an ounce (in drinking-water twice daily).
Nitrate of potash ...	Diuretic	$\frac{1}{2}$ an ounce (given in powder, ball, or water).
Bicarbonate of potash	" " "	" "
Linseed oil	Laxative	$\frac{1}{2}$ to $1\frac{1}{2}$ pints.
Castor oil	"	1 to 2 pints.
Glycerine	Indigestion and sore throat, etc.	4 ounces in water.
Powdered gentian, ginger, aniseed, pimento, caraway, calumba, quassia, have average doses of half-an-ounce. They are all tonics, carminatives, or correctives. Are commonly given in the food, but may be added to mixtures in the liquid form. Sometimes they are given as a bolus (ball).		
Oil of turpentine : The dose of this drug is regulated according to the use for which it is employed. It is used in flatulent colic; purpura; as a diuretic; as a purge; as an anti-worm medicine; stimulant, etc. About two ounces (four tablespoonfuls) will be quite sufficient for the first purpose, blended of course with half-a-pint of linseed oil. We always prefer to give it in this medicine, or else beaten up with eggs and milk.		
For worms about one ounce given along with six ounces of linseed oil, twice weekly, will be suitable.		
Barbadoes aloes ...	As a laxative or purgative	1 to 8 drachms (in ball or solution).
Sulphur	As an alterative ...	$\frac{1}{2}$ an ounce (in powder).
Calomel	Liver stimulant ...	40 grains (in ball).
Croton oil	Purgative (in oil) ...	10 to 25 drops.
Chloric ether ...	To allay pain ...	1 to 2 ounces (in water).
Sal volatile ...	Stimulant ...	1 to $1\frac{1}{2}$ ounces (in plenty of water).
Tincture of aconite (B. P.) : To allay pain and slow the heart. The dose is (averaged) 25 drops, given in water. Fleming's tincture of aconite may be given in 10-drop doses every four hours. It can be added to the drinking-water.		
Tincture of capsicum	Stimulant ...	$\frac{1}{2}$ an ounce (in water).
Tincture of ginger ...	Stimulant and corrective ...	" " "
Epsom salts ...	Laxative ...	3 or 4 ounces in the animal's drinking-water daily. Also acts as an antidote to lead-poisoning.
Brandy, whisky, and gin can be given in quarter-pint doses every six hours, in water, milk, etc.		
Stone ammonia ...	Stimulant and tonic ...	$\frac{1}{2}$ an ounce (dissolved in water).
Sal ammoniae ...	Liver stimulant and diuretic ...	$\frac{1}{2}$ an ounce (twice daily in drinking-water).

Clysters or Enemas.—These consist of liquid substances, injected into the lower end of the bowel, by means of clyster syringe or funnel. Before giving a clyster, always empty the rectum with the hand.

Laxative clysters are commonly composed of such substances as common salt and warm water; soft soap, oil, and warm water; or Epsom salts and warm water.

If the clyster has to be "retained," the amount of fluid injected must be small, but if it has to be "returned," a large quantity of liquid is necessary.

For constipation at the lower end of the bowel, about a pint of *cold* water should be injected daily.

About one to three gallons is the amount of fluid to inject as a laxative clyster. A pint of castor oil can be added to this. Linseed oil will serve the same purpose. A few handfuls of salt added to three or four quarts of tepid water makes a very good clyster for dislodging "pin"-worms out of the rectum.

Astringent (binding) remedies are often employed for injection into the lower end of the bowel, *e.g.* diarrhoea and dysentery. Nutriment is sometimes given the same way. Half-a-dozen eggs, beaten up with half-a-pint of brandy, one ounce each of laudanum and sulphuric ether, and a quart of tepid gruel, makes a very useful enema during severe prostration and pain. If the latter is absent, omit the laudanum.

Clyster syringes, or funnels, are made specially for the use of the horse, a large size being necessary.

Poultices and Fomentations.—Good and useful poultices are made from such substances as bran, linseed, oatmeal, spent hops, crushed turnips, carrots, potatoes, etc.

A poultice may be applied hot or cold, plain or medicated, in accordance with the effect desired. If the poultice has to be applied hot, care ought to be taken to have it a good

thickness and enclosed in some stout material, the outside of which is again covered with a piece of mackintosh sheeting.

Hot poultices are useless unless the warmth is kept up for two or three hours together, subsequently due care taken to prevent the animal catching cold, after their removal.

When cold poultices will answer the same purpose, we say by all means use them.

For offensive sores, a layer of finely-powdered charcoal can be spread over the surface of the poultice.

Hot water must never be used so as to scald the animal. It is a very useful means of helping to subdue pain in the chest, belly, etc.

An ounce or two of laudanum can be added to it. Dip a blanket (folded roller-towel fashion) into the liquid, and squeeze the superfluous water out of it by means of wringers (pieces of wood) passed through each end.

Cold water affords an excellent medium for subduing the inflammation of sprained muscles, tendons, ligaments, etc.

It will frequently stop bleeding.

Some brain affections are benefited by the use of ice-bags to the poll.

We prefer it to hot water during the onset of inflammation in the feet (lammitis).

The swelling around an open joint can often be banished through irrigation of the joint with cold water. This can be done by attaching a hose-pipe to the limb, or through the use of an "irrigator."

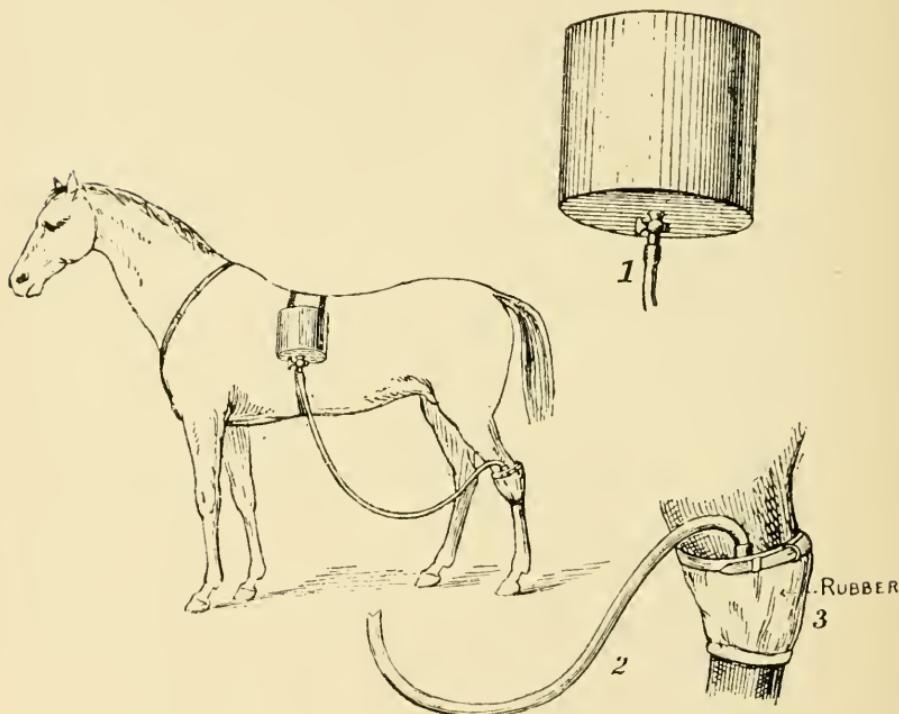
For this purpose the fomenting apparatus of Messrs. Blackwell, London, is an admirable arrangement. (See sketch.)

Setons and Rowels.—A seton consists of a piece of tape, inserted beneath the skin with a view of provoking a degree of inflammation beneath the latter.

Pleurisy and bronchitis are often relieved, we think, through the insertion of a seton.

Tumours, *e.g.* capped-elbow, can be made to disappear, as a rule, through this medium.

A rowel acts in the same way, but commonly consists of



FOMENTING APPARATUS (BLACKWELL'S).

1. RESERVOIR FOR HOLDING WATER. 2. HOSE-PIPE. 3. RUBBER JACKET.

a circular piece of leather introduced beneath the skin by making a snip in the latter and then separating it from the tissues beneath, to the extent of a couple of inches or so in diameter. The folded rowel is now introduced, and flattened out directly it is in position.

Wrapping the rowel with tow and smearing this with

Venice turpentine excites the inflammation quicker, and to a greater degree.

Several weeks (three) may be allowed to elapse before the rowel is withdrawn.

The seton is inserted by means of a special needle—the seton needle, to which a handle can be fitted.

The skin is snipped with the rowelling scissors; the needle pushed in through the opening thus made, and out at a corresponding one. The tape (half- or quarter-inch in width) is threaded through the eyelet of the needle, which is now withdrawn, carrying the tape with it. Tie off the tape just long enough, but not too long, otherwise it may be torn out.

Dress the seton with Venice turpentine, or turpentine ointment, etc.

Blistering Agents.—Various substances are employed for the purpose of provoking blisters upon the skin.

Foremost amongst these stand cantharides (Spanish fly, or the Indian blistering beetle).

Hot water, turpentine, croton oil, and red iodide of mercury are commonly used for the same purpose.

Ammonia is frequently used.

The action of a blister is similar to that of a rowel and seton.

Before applying a blister, the hair should be clipped closely off; the skin washed with soft soap and warm water, then dried.

Avoid blistering on very hot days.

Blistering ointment should be rubbed in for fully twenty minutes, if full benefit has to be derived from it.

After blistering, the animal's head should be kept tied short, or else the pillar-reins used for about twenty-four hours. (See Firing.)

The cradle is useful for preventing injury after firing or blistering.

FLY BLISTERING OINTMENT.

R.—Powdered cantharides	...	...	10 drachms.
Corrosive sublimate	...	...	10 drachms.
Vaseline	...	...	10½ ounces.

Melt the vaseline in a jar surrounded by hot water, then add the cantharides and corrosive sublimate, allowing the whole to macerate for several hours, then strain and stir till cold.

RED BLISTERING OINTMENT.

R.—Red iodide of mercury	...	...	4 drachms.
Almond oil	...	...	½ an ounce.
Lard	...	...	2 ounces.
Vaseline	...	...	1½ ounces.

Rub the mercury and oil together, and then mix thoroughly in with the vaseline and lard.

In summer, a couple of drachms of white wax can be added, instead of the same quantity of vaseline. It makes the ointment a better consistency.

BLISTERING LINIMENT.

R.—Powdered cantharides	...	...	6 drachms.
Powdered euphorbium	...	...	2 drachms.
Oil of turpentine	...	...	5 ounces.
Oil of thyme	...	...	1 drachm.
Olive oil	...	...	½ a pint.

Digest the cantharides and euphorbium in the turpentine for three weeks, then strain, and add the strained liquid to the olive oil and oil of thyme.

Another ointment is made by mixing equal parts of fly and red blister.

The application of a little vaseline, or olive oil, and Goulard's water (equal parts), is often resorted to as an application for soothing the part, about five days after it has been blistered.

Firing.—The joints are commonly fired for bony and other enlargements ; the tendons for permanent thickening.

We prefer to fire the part whilst the horse is in the standing attitude.

Firing in "points" or "lines" can be adopted.

Deep firing in "points" is the best for bone-spavin and other osseus deposits.

The hair requires clipping off before the iron is used.

Clearness of imprint and openness of lines is a desideratum.

Superficial firing, as a rule, does little good. A blister smeared on increases the activity of the cautery. The

head must be tied short for the time being, with the subsequent application of the cradle. The animal may afterwards be turned out at grass for a few weeks or months.

Bleeding.—The appliances necessary to bleed the horse from the veins in the neck comprise a fleam, blood-stick, and piece of twine, along with a pin to close the vein after the operation.

The left jugular will be found the most convenient to bleed from.

The animal's head must be held by an assistant, the operator standing on the left side.

The cord is now fastened tightly around the root of the neck, so as to raise (distend) the vein. Take a wet sponge and smooth the hair over the seat of operation.

Select the upper third of the neck as the place for tapping the vein, this latter being observed to be *standing out* in the furrow of the neck.

Take the fleam in the left hand, and give the back of the blade a smart tap, so as to cut the vessel to the depth of the heart-shaped blade.

Allow the blood to flow into a pail. Three or four quarts may be withdrawn from a young and vigorous horse. Hold the pail against the neck.

Having done this, pin the lips of the vein together (don't include the skin), maintaining them in apposition by means of a piece of horse-hair twisted around the pin, figure-of-8-fashion.

Tie the head short, to prevent the animal injuring the "pinned" vein.

We believe in bleeding in pulmonary apoplexy (acute congestion of the lungs), provided the animal is fat and vigorous. To neglect this matter under these circumstances is, in our opinion, simply trifling with the animal's life.

Never bleed a weak or aged horse.

DISINFECTANTS AND DEODORANTS

The former destroy obnoxious odours, while the latter neutralize them.

Carbolic acid, creolin, eucalyptus, chlorine gas, and sulphurous acid gas are amongst the commoner disinfectants. Permanganate of potash, copperas, charcoal, etc., belong to the latter class.

Sulphurous Acid Gas is made by throwing flowers of sulphur upon red-hot coals, contained upon a shovel, etc.

All doors and windows ought to be closed for a few hours. Then widely opened.

Chlorine gas is a most excellent disinfectant, and like sulphurous acid gas has the advantage of being cheap and readily prepared.

Make a mixture of three parts of common salt and one part of black oxide of manganese.

Put this into a shallow tin vessel and moisten it with a little water.

Now pour on some oil of vitriol—say half to one tea-cupful, and apply a spirit-lamp beneath for a few seconds or minutes it may be, until there is a strong smell of the gas.

Coughing is the “signal” for the operator to withdraw. Close doors and windows.

After an outbreak of influenza, or any other contagious disease, we know no better plan of destroying the risk of infection, than fumigating with chlorine gas.

Another method of making the gas, is that of pouring hydrochloric acid (spirit of salt) upon black oxide of manganese.

Permanganate of potash is a cheap and efficient deodorant. A teaspoonful should be added to every gallon of water. Chloride of lime is a good disinfectant.

MISCELLANEOUS RECIPES

ALTERATIVE POWDER

R.—Powdered gentian ...	...	...	$4\frac{1}{2}$	ounces.
Precipitated sulphur	...	...	3	ounces.
Powdered capsicum	...	...	3	drachms.
Nitrate of potash	...	...	6	drachms.
Bicarbonate of soda,	...	...	3	ounces.

Mix. Divide into one dozen powders.

Directions.—Give one night and morning in a bran mash.

ANTI-PAIN DRAUGHT

R.—Sweet spirit of nitre	...	...	1	ounce.
Chloric ether	...	...	$\frac{1}{2}$	an ounce.
Tincture of belladonna	...	...	2	drachms.
Chlorodyne	...	...	$\frac{1}{2}$	an ounce.
Tinctures of capsicum and ginger	...	of each	3	drachms.
Water	...	...	$\frac{1}{2}$	a pint.

Mix. Give the whole at once. Repeat in three hours, if necessary.

N.B.—The above can be safely given in any kind of internal pain.

ANTISEPTIC LOTION

R.—Creolin	...	...	...	...	2	drachms.
Water	...	...	...	...	1	pint.
Use, for wounds, etc.						

ANTACID POWDERS FOR INDIGESTION

R.—Bicarbonate of potash	...	...	6	ounces.
Powdered nux vomica	...	...	6	drachms.
Powdered gentian	...	...	6	ounces.
Powdered capsicum...	...	...	3	drachms.

Mix, and divide into one dozen powders.

Directions.—Give soft food and add a powder night and morning.

ANTI-DIARRHCEA DRAUGHT

(Through cold, excessive dose of physic, etc.)

R.—Tincture of catechu...	...	...	} of each 1 ounce.	
Tincture of ginger	...	...
Tincture of opium	...	...
Chloric ether	...	...	1 $\frac{1}{2}$	ounces.
Chlorodyne	...	...	3	drachms.
Flour gruel	...	...	1	pint.

Mix and give the whole at once.

Repeat in six hours if the purging still continues.

DIURETIC (STALING) BALLS

R.—Powdered resin	} of each, 2 ounces.
Venice turpentine	...	...	...
Soft soap	...	...	...
Linseed meal	...	...	...
Powdered nitre	4 ounces.

Mix in a stone or iron mortar and make up into one dozen balls.

Directions.—One occasionally, say, every three or four months. It is a very pernicious habit some grooms acquire of giving diuretic medicine every two or three weeks.

DIURETIC POWDERS

R.—Powdered nitre	...	...	...	3 ounces.
Powdered foxglove	...	...	...	2 drachms.
Linseed meal	...	...	...	3 ounces.
Mix, and divide into six powders.				
Give as above, only mixed with the food.				

LAXATIVE BALL

R.—Powdered Barbadoes aloes	...	...	1 drachm.
Extract of belladonna	...	...	40 grains.
Powdered podophyllin	...	...	20 grains.
Ginger	...	...	2 drachms.
Treacle and meal sufficient to make one ball.			

LAXATIVE DRAUGHT

R.—Tincture of belladonna	...	...	2 drachms.
Tincture of podophyllin	...	...	3 drachms.
Linseed oil	...	...	...
Shake well before using.			

TONIC FEVER MIXTURE

R.—Concentrated acetate of ammonia	...	...	3 ounces.
Bicarbonate of potash	...	...	5 ounces.
Sulphate of quinine	...	...	½ an ounce.
Dilute hydrobromic acid	...	...	3 drachms.
Cochineal	...	...	20 grains.

Mix. Water added to make 10 ounces.

Dose.—Two tablespoonfuls night and morning, in half-a-pint of cold water.

TONIC POWDERS

R.—Powdered sulphate of iron	...	...	} of each, equal parts.
,, gentian	...	...
,, calumba	...	...
,, bicarbonate of potash	...	3 ounces.	

Mix, and divide into one dozen powders. Give one in food twice daily.

PHYSIC BALLS

R.—Barbadoes aloes	...	...	...	12 ounces.
Treacle	...	...	...	5 ounces.
Powdered gentian	...	...	...	} of each, 1½ ounces.
Powdered ginger	...	...	...
Vaseline	...	...	...	4 ounces and 2 drachms.

Melt the aloes and treacle together in a closed jar surrounded by hot water. Now add the remaining ingredients. Each 4 drachms of this mass is equivalent to 3 drachms of aloes.

Dose of the mass.—Two to 10 drachms. One ounce will be a full dose for a medium-sized horse. Give a bran mash beforehand.

ANTI-COUGH BALL

R.—Extract of belladonna	...	...	1 drachm.
Powdered squills	...	...	1 drachm.
Powdered liquorice	...	...	4 drachms.
Linseed meal	...	...	1 drachm.
Treacle	...	...	a sufficiency to make one ball, which should be given every night.

ANTI-COUGH POWDERS

R.—Powdered belladonna leaves	...	...	6 drachms.
Powdered caraway seed	...	...	} of each, 1½ ounces.
Powdered liquorice	...	...
Powdered chlorate of potash	...	...	6 drachms.

Mix. Divide into three powders.

Directions.—Give one daily in food for about a week at a time.

COLIC DRAUGHT

R.—Sweet spirit of nitre	...	...	1 ounce.
Chloric ether	...	...	1 ounce.
Tr. belladonna	...	...	½ an ounce.
Tincture of capsicum	...	...	2 drachms.
Peppermint water	...	...	½ a pint.

Mix, and give the whole at once. Repeat in a couple of hours, if necessary to do so.

If the belly is becoming distended with gas, give the following at once—

R.—Creolin	...	...	...	...	...	½ an ounce.
Tincture of assafectida	...	...	...	...	...	.1 ounce.
Chlorodyne	...	...	...	...	...	½ an ounce.
Hyposulphite of soda	...	...	...	...	...	1 ounce.
Water	...	...	...	...	...	½ a pint.

Mix, and give the whole in the same quantity of water.

LOTION FOR SADDLE AND COLLAR GALLS

R.—Corrosive sublimate	...	...	18 grains.
Aniline blue	...	...	4 grains.
Bicarbonate of soda	...	...	1 ounce.
Water	...	...	$\frac{1}{2}$ a pint.
Mix, and label "Poison."			
<i>Directions.</i> —Apply to the sores frequently.			

Directions.—Apply to the sores frequently.

HOOF OINTMENT

R.—Tallow
 Turpentine
 Tar
 Vaseline and olive oil
 Yellow wax } of each, equal parts.
 Melt, and stir till cold.

Melt, and stir till cold.

WHITE LOTION

R.—White vitriol... $1\frac{1}{2}$ ounces.
 Acetate of lead 2 ounces.
 Water 1 quart.

Mix, and filter from the precipitate; then add another quart of water.

N.B.—This lotion is useful for sore shoulders ; saddle galls ; thrush of the foot ; wounds, etc., etc.

Directions.—Apply frequently.

TURPENTINE LINIMENT OR WHITE OIL

R.—Hard soap 1 pound.
Water a sufficiency

Melt the soap in the water, and as soon as ever it is quite cold, put it into a vessel and beat it up with a stirrer.

As the beating process is going on, oil of turpentine ought to be constantly added, but not too much at once.

This must be continued until the mixture ceases to thicken after being well beaten up with the turpentine.

When finished it should be of the consistence of good cream, without a

Now add one ounce of ammonia and a couple of drachms of oil of thyme.

CHAPTER XXII

CASTRATION OF THE HORSE

WHEN the male has not to be retained for stud purposes, it is desirable and usual to emasculate him.

By depriving the animal of its testicles we render it more tractable both for saddle and harness purposes. We do not wish to imply that an entire horse is necessarily vicious, though there is a tendency to become so when certain external influences are brought to bear upon the animal's natural desires.

A castrated horse is known as a *Gelding*, other males simply as *Entires*, or *Stallions*. Adult horses may be rendered neuter at any season of the year, but the usual period for operating upon the young is in the spring of the year, the months of April, May, and June being favourable, provided the season is in accordance with our ordinary experience of the weather during these months. Early morning is the best time for operating, selecting an hour and day when one may expect neither excessive heat, cold, wind, nor wet. Avoid having the animal operated upon during an east wind.

Regarding the age most suitable for castration, opinions are somewhat at variance, much depending upon the constitutional stamina of the animal. As a rule, however, one or two years is the best period.

For some few weeks before the time arrives for castration, we recommend that the colt be either kept in a straw-

yard, or else haltered daily, otherwise the animal is troublesome to deal with, becoming excited and rendering itself exhausted through refractory struggling and kicking, all of which could be avoided by taking timely precautions to render the colt more docile.

Although castration cannot be regarded as an operation attended with grave apprehension, particularly when we come to consider the thousands of animals operated upon annually in this and other countries, still unfavourable issues do now and again occur. We believe that deaths following castration are not uncommon in certain localities, and during certain seasons. It is within our experience to know that six animals have succumbed through lockjaw following the operation, performed by the same individual, during the same week, and by the same method.

As various Animal Insurance Companies grant policies at moderate premiums against castration risks, the owner can, in this way, defend himself against unpropitious results.

In the present day there is less risk than formerly, because veterinary surgeons can make use of a preventative serum (antitoxin), thereby minimising the risks which are necessarily attendant upon castration.

For the performance of the operation, we recommend the employment of a qualified veterinary surgeon, so that in the event of aught going amiss the owner may have confidence in skilled advice. We are well enough aware that many of the so-called "castrators" are able to perform the operation in a rapid and dexterous manner, and, as a rule, with a satisfactory record, still our knowledge inclines us to recommend the employment of the veterinarian previously referred to.

What may be termed "spurious" castration is not unknown, the outcome of which has now and again led to the possession of an unmanageable animal.

Whenever circumstances render it convenient, it is desirable for the owner to be present during the performance of the operation; in this way he has the satisfaction of knowing whether or not both testicles have been duly extracted. Mere evidence of a scar (*cicatrix*), or wound, after the operation is of no value in determining a successful operation. Be it understood that the preceding lines are only applicable to certain unscrupulous individuals.

The usual fee charged by the veterinarian for the operation is half-a-guinea, in some localities seven-and-six, with or without the journey to the client. The fee for aged horses may be a guinea. The necessary after-visit or visits are generally included in the fee stated.

The operation can be performed in the standing or recumbent posture. By many the former is preferred, though we believe, so far as the safety of the operator is concerned, the latter is preferable. The time spent in throwing the colt is done away with, whilst the trivial risk of injury to the animal, during this act, is obviated. If the colt has to be "thrown" for the operation, it is usual to withhold food on the eve of such. A small allowance of corn can be advantageously given a few weeks prior to castration.

When the colt is going to be castrated in the standing attitude, the scrotum is cut through with a sharp knife (*castrating knife*), and the testicles severed by means of an instrument known as the "*écraseur*"—an appliance with a severing wire, or chain, working upon an adjustable rack-work.

Many veterinarians prefer to put caustic clams (plain will do just as well) upon the cords, and then sever the testicles immediately below the clams.

Others allow the testicles to slough off—a procedure which the writer cannot recommend.

Whatever advantages may be claimed for this latter are, in our opinion, quite groundless, and incapable of bearing reasonable argument.

On the day following the operation, the clamps are quietly removed, and the cords allowed to return into the scrotal-bag.

If any adhesions have formed, these are broken down with the finger, taking care not to carry infection into the wound. The hands must be cleansed with some antiseptic solution, *e.g.* Jeyes' fluid in water.

As a rule, there is considerable swelling about the scrotum, though there need be no cause for alarm. It is a favourable rather than unfavourable sign.

A non-stimulating diet may be given, and gentle exercise allowed on the day following, provided the weather permits.

If the colt has to be thrown for the operation, a bed of short but clean litter ought to be prepared the same morning.

In every instance before operating it is desirable to carefully examine the scrotum, in order to ascertain the presence of both testicles within the sac.

In the event of there being only one, the operation may have to be deferred, as it is possible that the animal may be what is known as a "rig," *i.e.* a horse in which one testicle (sometimes both) has failed to descend, for which a special form of operation is necessary. (See Rigs.)

Supposing that the colt has been "thrown," the operator grasps the scrotum, so as to tense the bag upon the testicle beneath, and then makes a bold cut lengthwise of the organ, when the testicle pops out. Some operators sear the skin through, thinking that there is less bleeding. We fail to see the advantage of this, whilst it is certainly more painful and less expeditious.

The testicle has now to be severed from its attachment with the cord (spermatic cord). This cord contains the blood-vessels, therefore the chief aim is that of cutting the blood-supply off with a minimum loss of blood, and at the same time to avoid bruising the accompanying tissues.

Each operator has his preference, for which he will assign superiority over that practised by some other operator.

Very often the proprietor demands some particular form of operation.

Briefly, we may state that the testicular cord can be severed by the hot-iron (very common), écraseur, torsion forceps, ligature (in our opinion a bad plan); by clamps, etc.

In accordance with our experience, we don't hesitate to recommend the first and third methods. The first-named is universally practised, and still holds its place; but the torsion forceps gives good results, though rather a slower operation. The écraseur is largely used, and preferred by many. As a castrating instrument, its present construction compels us to regard it less favourably than others.

When the hot-iron is used, the cord is grasped in an iron clam, so that the testicle can be seared off close against the clam. If there is the slightest sign of bleeding from the seared end of the cord it must be "sealed" up before being allowed to escape into the bag. This being done, the operation is repeated on the other testicle in a like manner.

The torsion forceps twist the cord up into a delicate spiral filament, whereas the écraseur gradually draws the cord-tissues out.

As soon as the operation is over (if cast), the ropes are unfastened and the colt allowed to rise.

When castrating the animal in the standing position, it is advisable to fasten the hind-legs around the neck, put

on a twitch (with a strong man at the head), and then press the hind-quarters against the sides of adjacent walls. Subjugation seems to follow a slight tap on the testicles if resistance is offered—and such usually happens. The left hand grasps the testicle-bag and the right the knife, selecting the testicle furthest away first.

The unfavourable results of castration are—lockjaw, thickening of the cord and fistula of the scrotum, rupture, inflammation of the peritoneum, bleeding.

For a description of these, the reader is referred to the capital letters under which the several diseases are placed.

RIGS

As already explained, a Rig is a horse having one or both testicles absent from the scrotal-bag—say by the time the animal arrives at a couple of years.

The terms “Cryptorchid,” “Enorchid,” or “Anorchid” are often applied to such horses, and by certain individuals a “Ridgeling.”

The right or left testicle may be absent from the position indicated. It does not affect one any more than the other.

The vicious nature of some horses is due to the concealed testicle or testicles. It is well to bear in mind the possibility of this condition. Such horses are sterile, at least in the majority of instances.

Frequent erection of the penis on the approach of mares, neighing, viciousness—along with the absence of a scar upon one side of the scrotum (though the latter may have been made for the purpose of deception)—is fairly good positive evidence (in the absence of certain knowledge) that the animal has a hidden testicle.

The operation for the removal of the concealed testicle, as practised by Miles, appears difficult to supersede.

Lastly, it must be mentioned that the testicles in the "entire" horse should be firm, rounded, and well let down, rolling freely when the scrotal-bag is pressed.

Small, retracted, or pendulous testicles are a sign of want of vigour, and such animals are usually feeble propagators.

CHAPTER XXIII

DISEASES AND ACCIDENTS

A

Abscess. This is an accumulation of matter, either pus-like or watery in character, whilst its formation is the result of a direct or indirect injury; less frequently through blood-poisoning, in which case the formation of matter commonly takes place both internally and externally, bringing about grave constitutional disturbance. The collection of matter forming under the jaw during the ordinary form of strangles is simply an abscess, and requires but the treatment prescribed for any other boil. In the last-named disease, we believe that it is of a specific nature.

Very large abscesses are quite common in the horse.

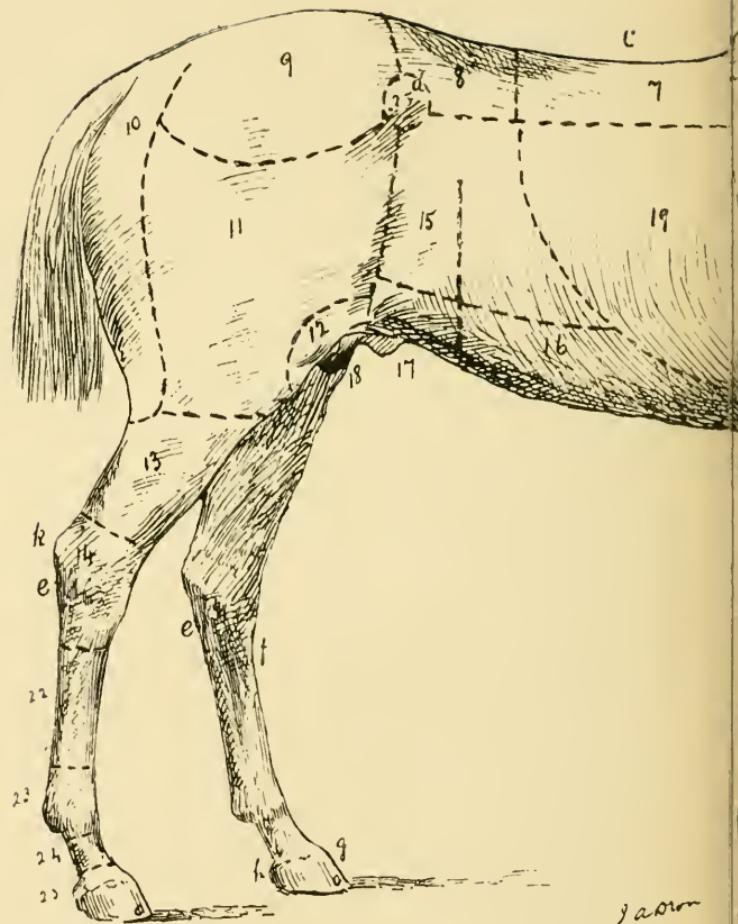
The point of the shoulder is not an uncommon place for an abscess to make its appearance, especially in colts.

An abscess in connection with the brain or heart is most certainly fatal.

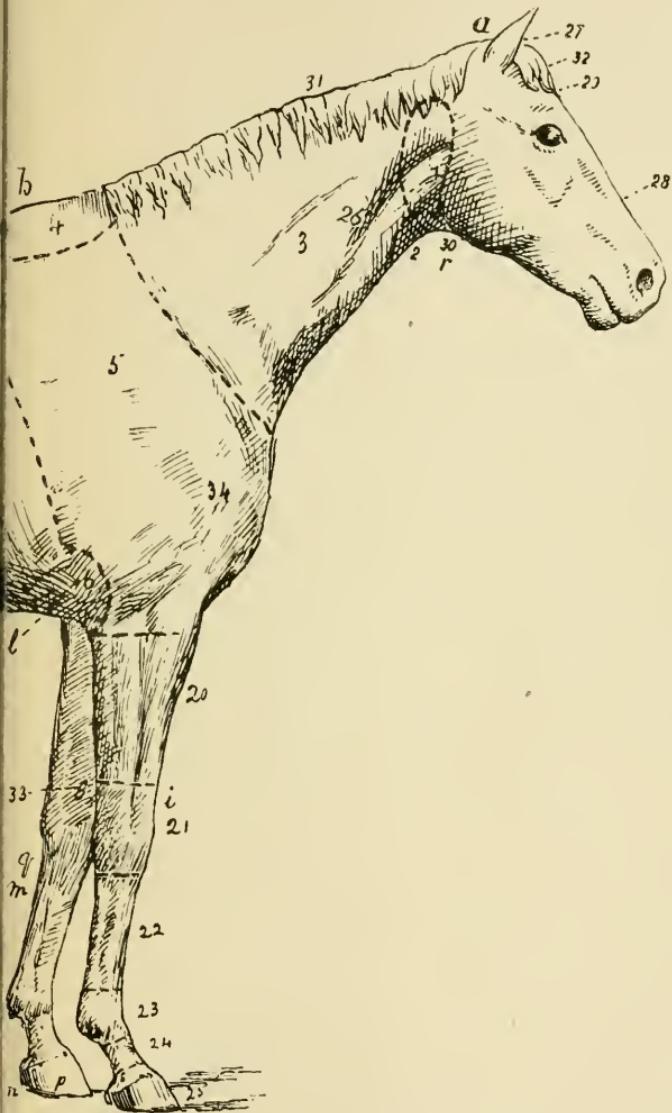
Symptoms. A gradual increase in size (if externally), accompanied by heat, tenderness, and, in the later stages, a throbbing sensation imparted to the finger when placed over the seat of disease. Later on, the skin "pits" on pressure, and takes on a soddened feel beneath.

Internal abscesses give rise to pain and exhaustion. When about the brain the horse presses its head against the wall, manger, etc.

- a. Seat of Poll evil.
- b. Seat of Fistulous withers.
- c. Seat of Sore back.
- d. " " Hipdown.
- e. e. " Curb.
- f. " " Spavin.
- g. " " Ringbone.
- h. " " Side bone.
- i. " " Broken knee.
- k. " " Capped hock.
- l. " " Capped elbow.
- m. Common seat of Splint.
- n. Seat of Thrush.
- o. o. " Sandcrack.
- p. " " Fore limb.
- q. " " Speedy cut.
- r. " " Strangles.



REGIONS OF HORSE FROM THE SIDE, SH



LANDMARKS OF SOME DISEASES.

1. Parotid Region.
2. Throat.
3. Neck.
4. Withers.
5. Shoulder.
6. Elbow.
7. Back.
8. Loins.
9. Croup.
10. Buttock.
11. Thigh.
12. Stifle.
13. Leg.
14. Hock.
15. Flank.
16. Belly.
17. Sheath.
18. Testicles.
19. Side, or ribs.
20. Fore arm.
21. Knee, or wrist.
22. Canon, or shin.
23. Fetlock.
24. Pastern.
25. Hoof.
26. Jugular Furrow.
27. Ears.
28. Face.
29. Forelock.
30. Angle of lower jaw.
31. Mane.
32. Forelock.
33. Chestnut.
34. Breast.
35. Angle of Haunch.

A watery (serous) abscess is well seen during the outset of poll-evil and fistulous withers. Such may appear upon any part of the body.

Treatment. Warm fomentations, and when the abscess is mature, cut it open at the lowest part so that the matter will drain freely away.

Keep the wound open for a few days by the insertion of a bit of tow, and wash the sac out with a little weak anti-septic (Jeyes' fluid, etc.) solution. The wound can now be allowed to heal itself, of course after the removal of the tow.

A serous abscess does not require, unless at the poll or withers, any fomenting. Its contents must be given free exit through the use of the knife.

During strangles good and extra food is called for.

House the animals.

Amaurosis, or glass-eye. As the name implies, the eye or eyes assume a glassy appearance.

It is the result of paralysis of the nerve or nerves of sight. It may be temporary or permanent.

Angle-berries. See Warts.

Anthrax. This is a germ disease, being caused by organisms circulating in the blood.

The germ is known as the Anthrax Bacterium (*pl.* Bacteria). It is extremely minute in size, requiring high powers of the microscope for the demonstration of the same.

In shape, it is like that of a short rod, with square or notched ends.

Its methods of multiplication are by the rod breaking across (transverse fission), or else by forming spores in the interior of the chain-like length. The latter usually happens outside the body. These organisms give rise to deadly excretions, which cause, as a rule, the rapid death of their host.

In the horse, anthrax is not at all common in this country, but either the same, or another disease very closely allied to it, is common at the Cape, where it bears the name "Cape Horse Sickness." A horse which has been fortunate enough to recover from this malady, is known as "salted," *i.e.* proof against the disease (acquired immunity).

Outbreaks of anthrax in the horse happen now and again, though chiefly in the fen-lands of Norfolk and Lincoln.

In cattle, the disease is known as splenic apoplexy, and in them it is fairly common. The horse may get it from these animals; so may the human subject, dog, sheep, pig, rodents, etc.

In dealing with anthrax-stricken animals—living or dead—the utmost precautions have to be taken to guard against inoculation, as the disease is usually fatal to man, though not to the dog, fowl, etc.

In acute anthrax, the animal may be seized whilst at work, succumbing to the attack within an hour or so.

Trembling from head to foot, violent pain in the belly, and quick breathing, along with a small pulse, are the symptoms of most importance. The body rapidly decomposes after death. The diagnosis must rest upon the finding of the germs, for which work an expert microscopist is required.

Swelling of the head and tongue is commonly seen when the disease takes a slower course.

If suspected, report the matter at once to the nearest Local Authority.

Anus, protrusion of. This is not an uncommon accident. It is denoted by the protrusion of the red membrane of the anus, forming a tumour under the root

of the tail. Dry food and severe straining act as excitants towards its production. It may become strangulated, and then it assumes a blackish appearance.

Treatment. Cleanse the part, then try and return it, subsequently smearing with gallic acid ointment. Soft food must be the order.

N.B.—The protrusion must not be mistaken for a polypoid (stalked) tumour.

Arsenic-poisoning. Some horsekeepers have got into the pernicious habit of giving white arsenic (arsenious acid) to their horses about once a week, in the form of a powder, along with the animals' food.

The average dose of this poisonous drug is three grains, but these foolish fellows often give twenty times this amount. Continued for a long time, the "tolerance" of the drug enables the animal (like arsenic- and opium-eaters) to stand big doses, but as arsenic tends to accumulate in the cells of the liver, a fatal attack of arsenic-poisoning (acute inflammation of the stomach and bowels) may happen at any moment, the blood-stream having swept the drug into the circulation.

As a rule, the proprietor is at a loss to account for this sudden onset of disease, and the horsekeeper is not going to willingly sacrifice his situation, and perhaps incur criminal prosecution, if he can possibly avoid confession.

Analytical and veterinary experience may subsequently compel him to do so, or the plea may be established perhaps without voluntary statements on his part.

Grooms ought to be made aware of the consequences of drugging their horses without consulting their master.

Symptoms. Violent pain in the belly; purging or dysentery; straining; quick small pulse and shallow breathing; sweating, redness of the eyes, and thirst.

Treatment. This must be left in the hands of a duly

qualified veterinary surgeon. The proper antidote is peroxide of iron, and morphia to calm the pain.

Azoturia. This has been commonly termed nitrogenous urine, because it was thought¹ the nitrogenous constituents of this liquid excretion were largely increased.

The disease comes on very suddenly, usually showing itself after the horse has been idle for a day or so, and then not until, as a rule, the animal comes out of the stable. It may be that it has only travelled a few yards.

Symptoms. Partial or complete loss of control over the movements. Sometimes the animal falls before it can be got home.

The muscles of the haunch feel as hard as wood, and the animal is unable to rise.

The most important indicator of azoturia is, however, the colour of the urine. It soon becomes like coffee-infusion without the milk.

A large number of horses die from this disease, especially when down. Recoveries are also frequent.

Treatment. Dose of purgative medicine, and a clyster or two to assist the action of the purgative.

Stimulate the spine. Clothe the body, and keep a dry bed for the animal to lie on.

Veterinary aid is essential, because it is advisable to draw off the urine, and perhaps wash out the bladder.

Further, skilful treatment is very important in a malady so quickly fatal.

B

Back, broken. The back may be broken either through a fall, the fall of a heavy weight upon it, or during struggling, when the animal is cast in its stall. Disease of the bones predisposes towards the occurrence of broken-back. Paralysis, behind the seat of fracture, results.

¹ This theory has now exploded.

Bishoping. *See chapter on Age.*

Bladder, inflammation of. Inflammation of the bladder is not a common affection by any means.

The cause, symptoms, and treatment are matters for the skill of the veterinary surgeon.

Bladder, stone within. Calculi frequently occur in the bladder of both the mare and horse. Such may or may not be formed in this situation. If the calculus is a small one, it is quite possible for it to be expelled during the act of urination.

The flow of urine may be either impeded or completely stopped, through stone blocking the outlet of the bladder, or lodging in some portion of the passage.

Removal of the stone or stones can be effected by operation (lithotomy).

Blood-spavin. *See Spavin.*

Bog-spavin. *See Spavin.*

Bone-spavin. *See Spavin.*

Bot-fly. This fly is about during the months of May, June, July and August. It deposits its eggs upon the hairs of the horse, especially about the knees, anus, shoulders, etc.

By some not very well-understood means, the larval stage of the fly gains an entry into the horse's stomach, and barrel-shaped larvæ attach themselves to the gullet-end of the stomach-lining.

In the following spring, these let go their hold, and pass out with the dung.

After a period of quiescence on the ground, a full-blown fly emerges, ready to repeat perpetuation of the species.

The horse thus serves as an "intermediate" bearer.

Bowels, inflammation of. This is, we regret to say of too common occurrence in the horse. It is denoted by continuous pain, a hard, small, thready pulse, anxious

expression of countenance, dilated pupils, cold sweats, and general coldness of the body.

Rising, rolling, and kicking with pain are ever-constant symptoms.

The covering of the bowels very often participates in the inflammation.

So far as we are aware, it is always fatal, death occurring within 24 hours, or thereabout, from the onset of the pain. A common cause is that of parasites (worms); but "twist of the bowel," and "telescoping" of it, are frequently found after death.

It has been seen in anthrax, and through the ingestion of vegetable and mineral poisons.

Bronchitis. Inflammation of the bronchial tubes is not uncommon; in fact it often happens in influenza, though it does occur apart from this. It is either "acute" or "chronic." The former often ends in the latter, whilst there is always an inclination—under the slightest provocation—for the last-named to usher itself into the acute form.

The large, small, or medium-sized air-tubes may be affected.

When the smallest bronchial tubes are the main seat of the disease, its gravity is increased.

Bronchitis may, if neglected, run on to inflammation of the lungs.

Symptoms. In the acute form of the malady there is always a considerable amount of fever. The cough, at first hard and dry, is subsequently soft and moist. Pain is present.

The so-called mucous *râle* is an important indicator of bronchial inflammation.

The mucous membranes of the eyes are of a bluish-pink colour.

Loss of appetite, confined bowels, and so forth are other minor symptoms.

Chronic bronchitis is denoted by a cough. It constitutes the so-called "chronic cough."

Treatment. Place the animal in a well-ventilated stable, and keep the temperature as near 60° F. as possible. Uniformity of stable-temperature is one-half the battle in dealing with bronchitis in its acute stage.

- Clothe the body, and put on a set of flannel bandages. See that the bedding material is dry.

If the bowels are confined, add a few tablespoonfuls of linseed oil to bran mashes, scalded linseed and crushed oats, once daily.

Encourage the discharge from the nose by steaming the nasal passage twice daily.

Sometimes a seton placed in front of the chest does good.

Mustard-paste, or some stimulating liniment, *e.g.* camphorated oil, should be well rubbed over the throat and chest. In sore throat this treatment is equally applicable.

Make use of the following electuary twice daily :—

R.—Extract of belladonna	...	...	3 drachms.
Dover's powder	...	...	4 drachms.
Powdered squills	...	...	1 ounce.
Treacle	...	...	a sufficiency to make of the consistence of good jam.

Directions.—Smear a piece about half the size of a walnut on the sides of the molar teeth or tongue as directed. Continue this treatment, with the addition of half-an-ounce of bicarbonate of potash in the drinking-water, night and morning.

Keep the atmosphere moist by allowing a few pails of water to stand about, but this must not be allowed for drinking purposes.

Chronic bronchitis is very little benefited by medicinal agents.

Bruises. These can be treated by the application of cooling lotions, or a plaster of fuller's earth, etc.

Brushing. This is caused by striking the opposite limb with the inner side of the shoe.

The horse may fall through the pain inflicted.

Keep the foot narrow on the inner side, or use a three-quarter shoe. A boot can be put on.

C

Cataract. This is a disease affecting the lens of the eye, or the capsule investing the lens, or both.

It is an unsoundness, and in the horse a cure is out of the question.

One or both eyes may be affected.

The sight, in course of time, becomes entirely lost.

By dilating the pupil with certain medicinal agents (atropine), a better view of the cataract can be got.

The candle-test is the best for discovering defects in the lens.

Catarrh. Catarrh, or "cold in the head," as it is sometimes called, is a pretty common complaint amongst horses, especially during the change of seasons, or long spells of work in damp or wet weather.

Although a comparatively benign affection, it is one which, if neglected, is liable to end in a continuance of the nasal discharge, constituting one cause of *chronic nasal gleet*. There may or may not be a cough present, but there is always a discharge from the nose, and perhaps eyes, along with a loss of the usual vivacity and energy.

Treatment. Throw the horse off work for a few days, clothe the body, and give warm soft food, but avoid liquids for 24 hours.

Steam the head with steam issuing from boiling water

and bran, to which a tablespoonful of spirit of camphor and terebene has been added.

Oil of eucalyptus can be used instead.

Chorea, shivering, or St. Vitus' Dance. In the horse this appears to be an incurable disease, and constitutes unsoundness. There is often a great difficulty in detecting it, because the animal may go for weeks without rendering evidence of being a "shiverer."

We have seen horses badly affected with it at fairs, etc., which the seller has tried to conceal, either by turning the animal quickly, or employing some other stratagem. A simple "quivering" of the tail will perhaps be the only sign of the disease.

The muscles of the fore-arm are in some horses the locale of the affection.

The quivering of the tail can often be observed in the stall by causing the animal to pass from side to side numerous times, with the observer behind. If this fails, give the animal a drink of water, or (when convenient) drive it into a pool of water, watching the tail, etc., meanwhile.

Chronic nasal discharge. See Nose, discharge from.

Cold. See Catarrh.

Collar-galls (sore shoulders). An ill-fitting collar is a common enough cause of sore shoulders.

Some horses are predisposed. To work a horse with collar-pressure whilst suffering from a gall thereon, is a criminal offence, and renders the proprietor liable to prosecution. Horses predisposed to the affection can be worked with a breast-band. Another cause is that of fraying of the lining of the collar.

A good-fitting collar should have equal pressure all round the shoulders, without squeezing the wind-pipe and blood-vessels. The traces should be attached "half-way up the collar."

As a lotion for collar-galls, the following will be found beneficial :—

R.—Subacetate of lead	...	...	...	1 ounce.
Powdered boracic acid	...	...	2 drachms.	
Oxide of zinc	...	...	2 drachms.	
Water	...	...	...	1 quart.

Mix, and apply several times daily.

Colic, gripes or belly-ache. This is perhaps the commonest complaint from which the horse suffers.

Although a horse with simple belly-ache may seem in a serious condition to the layman, it is an affection which readily yields to proper management, provided it is "colic," not inflammation. The reader must understand that a simple attack of belly-ache implies severe pain in the horse, owing to the large size and extent of the bowels. Such pain is due to spasmodic contraction of the wall of the bowel at some particular part of its length. The writer's opinion is that an ordinary attack of belly-ache never runs on to inflammation. There is nothing to show that such has ever happened.

The pain of belly-ache may continue for several days, and then subside. No one would induce us to believe that there had been the slightest touch of inflammatory activity present.

We have never had the pleasure of seeing a horse recover from inflammation of the bowels.

The only danger attachable to belly-ache is that the animal may twist some part of the gut during its struggles through pain. In-foal mares must be prevented from rolling when suffering from colic.

Causes. Sudden changes of food ; drinking cold water when over-heated ; abuse of purgative medicine ; worms ; impaction of the bowels with food material ; concretions moving from one part of the intestine to another ; and other causes.

Treatment. At the outset we must condemn the too frequent practice of giving the anti-colic draughts of quack medicine vendors. Nothing could be absolutely more harmful, unless the vendor guarantees such free from physic.

To give a horse any kind of purgative medicine without knowing the cause of the belly-ache, is very wrong.

Supposing that you are certain that the pain is the result of indigestion or confined bowels, then by all means give a purgative, and let it be a good one, so that the bowels will freely respond to its action.

In every instance, the pain ought to be calmed ; for which purpose the prescription below will be found suitable :—

R.—Tincture of belladonna	...	...	...	3 drachms.
Chlorodyne	...	...	...	$\frac{1}{2}$ an ounce.
Sweet spirit of nitre	...	...	...	2 ounces.
Bicarbonate of potash	...	...	...	$\frac{1}{2}$ an ounce.
Hyposulphite of soda	...	...	...	$\frac{1}{2}$ an ounce.
Water	...	...	...	$\frac{1}{2}$ a pint.

Directions.—Give the whole at once.

After giving this, keep the horse walking about.

In one hour's time, if the pain be no better, give half-an-ounce of chlorodyne and one ounce of spirit of camphor in half-a-pint of tepid water. Massage the belly.

Flatulent Colic. This is much more serious than the last-named, because the animal may become so distended with gas that the heart's movements are stopped by the forward pressure of the midriff. The bowel or the midriff may rupture, though the mere fact of finding the latter ruptured after death does not say that such occurred whilst the animal was alive.

Active treatment is demanded. Four ounces of turpentine, blended with a pint of linseed oil, ought to be given at once, if no other drugs are at hand.

Keep the animal moving about. Send straight away for

veterinary assistance, because it may be necessary to puncture the bowel, in order to let out the gas. The distension of the belly with the gas is sometimes so great that the horse may succumb before veterinary aid can be got. Always give the draught, however, and don't regret sending for the veterinary surgeon because the horse is well when he arrives. It might have been getting worse. The cost is nothing like the risk.

Diagnosis of Colic. The pain is intermittent, *i.e.* there are intervals of ease. The pulse is not altered when the pain is resting; although the horse may be sweating greatly, there is no anxiety about the face, no pinched expression, and the body does not assume a cold, clammy feel, as happens in a fatal inflammation.

The after treatment consists of careful feeding.

Constipation. Some horses are predisposed to suffer from torpidity of the bowels, probably on account of the continued use of dry fodder.

A deficient secretion of bile leads to constipation.

Certain foods have an astringent or binding action.

Treatment. Soft, moist food. If the animal leads an idle life, daily exercise ought to be given, so as to rouse up the liver functions. The tone of the intestines can be improved by the daily use of half-a-drachm of powdered nux vomica, along with one ounce of liquorice, given in the animal's food.

Constipation is a constant symptom of certain febrile conditions, *e.g.* rheumatism.

Foals are frequent sufferers. The waste materials (meconium) are naturally expelled by the purgative properties of the first milk (colostrum). To overcome this confined condition, inject two or three ounces of glycerine, and give one or two ounces of castor oil, along with two ounces of linseed oil.

Consumption. *See* Tuberculosis.

Contracted Feet. *See* Feet, contracted.

Corns. A corn constitutes unsoundness,

It usually appears upon the inner quarter (heel) of the fore-limbs. The immediate cause is a bruise.

A recent corn is denoted by a red star-shaped mark, but an old corn has a bluish-black appearance.

Sometimes a corn begins suppurating (suppurating corn).

In order to detect a corn, the shoe must be taken off.

Lameness is often present.

The horse can be shod with a leather sole.

Cough, chronic. *See* Bronchitis.

Cracked Heels. The horse is frequently troubled with this complaint. It is the result of irritation through sand, wet, etc., and very often the fault of the groom.

Lameness arises through the sores cracking when the animal first leaves the stable.

Treatment. (1) *Preventative.*—If the groom does not dry the heels properly, forbid him washing them, but let the mud dry on, and then brush it off.

Some avoid clipping the hair off the legs.

(2) *Medicinal.*—Apply white lotion. *See* Lotions.

Crib-bitting. This is a stable vice, and a very objectionable one.

A muzzle or concealed crib can be used. The animal may be kept in a place where there is no manger.

Curb. Horses having over-bent or sickle-shaped hocks are predisposed to “spring a curb.”

What is a curb?—It is a variously-sized swelling, three or four inches below the point of the hock.

How can one tell whether a horse is affected with curb?—Why, by looking at the part in profile.

What shall we see?—A slight convexity rising from the back of the bone.

Does curb cause lameness?—Yes! when it is forming, but not necessarily when formed.

Is it an unsoundness?—Certainly.

The treatment comprises firing, or the daily application of a little red-blistering ointment.

Cuts. See Wounds.

D

Diabetes. In its commonest form, diabetes is characterized by the excessive outflow of pale or colourless urine, perhaps affecting a number of the same stud at one time. The excessive discharge from the urinary organs arises from disturbed digestive functions, probably brought about through feeding the animal or animals upon musty hay or oats, etc.

The abuse of diuretic (staling) balls, powders, etc., will also bring it on.

The diagnostic symptom is an excessive discharge of pale-coloured urine.

Treatment. Withhold all liquids for about twenty-four hours.

Give one of the following balls night and morning—

R.—Resublimed iodine	...	...	2 drachms.
Iodide of potash	...	...	4 drachms.
Bicarbonate of potash	...	...	1½ ounces.
Powdered gentian	...	...	4 ounces.
Treacle	...	...	a sufficiency to make six balls.

Give as directed.

Of course the cause must first of all be removed.

Diarrhoea. Colts and foals are the most frequent sufferers from excessive evacuation of liquid faeces. A distinction must be drawn between moderate and excessive purgation.

Over-acidity of the stomach is the usual cause of infantile

diarrhoea, and it is only when treatment is directed against this hyper-acidity that one can hope to be successful in stopping the discharge.

A fairly common cause of diarrhoea in yearlings is a blood-sucking worm, known as "Strongylus Tetracanthus." Sudden changes of diet, abuse of physic balls, exposure to cold, too much green food, and other special causes, are the chief factors operative in the production of diarrhoea.

Treatment. Try and ascertain the cause, because be it understood that diarrhoea is but a symptom of disease or disorder.

In the case of sucking foals, give the dam half-an-ounce of bicarbonate of soda or potash, along with her food, twice or thrice daily.

To the foal, give a couple of ounces of castor oil, along with one drachm of laudanum. A few hours afterwards give it two drachms of bicarbonate of potash, repeating this every six hours. This powder can be given in a little milk.

Or one may, instead of giving the castor oil, administer a dose of grey powder—20 grains placed on the back of the foal's tongue. Afterwards use the potash powders previously recommended.

For the treatment of colts in which the diarrhoea is supposed to be caused by worms, the reader is referred to the chapter dealing with these parasites.

Adult horses affected with diarrhoea, either through the abuse or unexpected action of physic, or arising through exposure to cold, etc., may have half-an-ounce of chlorodyne and one ounce of tincture of catechu, and a quarter of an ounce of tincture of kino, administered night and morning, in a pint of wheaten flour-gruel.

Sloppy diet ought to be withheld, unless it be of a binding nature.

Hard food of any description must not be given.

Dislocation of the knee-cap. The stifle-joint is made up partly by three bones, the one in front being a small gliding bone, known as the patella, or knee-cap. It may slip away from its proper articulating surface. The causes of this are variable.

Treatment. Draw the limb forwards, and keep it in position by a cord around the neck. The stifle can then be blistered. This treatment is chiefly applicable to colts, and not when there is a fracture, etc.

A high-heeled shoe can be put on.

The most important matter is that of keeping the limb extended.

Distemper of the horse (influenza). Long known by the terms influenza, pink-eye, bilious fever, etc., we have decided to give our readers a change of name—though not original—in connection with this disease, which we have spoken of as “horse distemper,” and define as a *specific, infectious malady, capable of spreading from horse to horse, but not to animals of a different species.*

In its simplest form, it is characterised by a catarrhal discharge from the nose, general weariness, cough, soreness of the throat, and a rapid loss of flesh. The extreme prostration is one of the most marked features of influenza, whilst the internal temperature ranges from 103° F. to 105° F., more rarely higher.

Sometimes the lungs, liver, bowels, and joints become implicated, and this is the reason why the terms “chest distemper,” “bilious fever,” “rheumatic,” “influenza,” etc., are often used. Pink-eye had its origin through the peculiar scarlet colour of the mucous membrane lining the eyelids.

Although a horse may have more than one attack of distemper, we believe that the economy is rendered less liable to its occurrence if the animal be exposed to infection.

During certain seasons, influenza assumes an epidemical form ; at others, it partakes of the endemic nature, *i.e.* the horses of one city may be largely affected, whilst adjoining cities know little of the disease during the particular season of its prevalence, in a given locality.

Like distemper of the dog, this equine equivalent is always present in this country, though perhaps free from local or general distribution. Isolated cases are constantly occurring.

Spring and autumn are the times of the year when distemper is the most prevalent.

Symptoms. Dryness and redness of the mucous membranes lining the eyes and nose, followed by a thin watery discharge, gradually thickening. The cough is at first dry and hard, subsequently becoming soft, moist, and oft-repeated.

If pleurisy sets in, the cough is hard, short, and suppressed, the latter being to avoid pain during the act of coughing.

Soreness of the throat is usually present—indeed, the cough may proceed from throat irritation. During the early part of the attack shivering fits are present, though these may escape careless observation. Thirst, loss of appetite, and lying down to rest are constantly seen in influenza.

Internal temperature elevated several degrees, bowels confined, and a scanty secretion of urine.

Bilious symptoms are seen in some horses. The yellow colour of the “whites” of the eyes, inside of the cheek and pallid mucous membranes elsewhere, are the chief indicators of liver implication. The pulse is soft and feeble. Diarrhoea or dysentery is inclined to prevail if the horse is situated where debilitating (bad drainage, darkness, etc.) influences prevail.

Bronchitis is a common complication, whilst pleurisy and lung-inflammation are not infrequent.

Pleurisy is denoted by the short and painful acts of coughing, high temperature, and "sighing."

The pulse will be found beating at the rate of about 80 times per minute, and of a small, hard, and wiry nature. If dropsy of the chest comes on to any extent, the horse stands obstinately, breathes carefully, and dropsical swellings appear about the chest and limbs. A ridge will be seen running along the side of the belly. An important symptom of lung-inflammation is the upward heaving of the back-bones.

A description of the rheumatic form will be found on reference to Rheumatism.

Treatment. Place the animal in a clean, well-lighted and well-ventilated stable. Clothe the body. If a light horse, bandage the limbs. In the event of the disease beginning amongst a stud, separate the diseased animal at once, and keep it alone. Then take the temperatures of the rest of the horses, and note the "rise" in any of them. Mark such as suspicious.

Having got out the diseased, disinfect the building with chlorine gas (*see Disinfectants*).

Good food and nursing are the best aids towards a favourable issue. To the animal's drinking-water, add half-an-ounce of powdered nitre twice daily.

No purgatives or bleeding must be thought of. These would be subduing the horse—not the disease.

As a draught, we can recommend the use of the following every six hours:—

R.—Sweet spirit of nitre	...	...	...	1 ounce.
Sulphuric ether	...	...	...	6 drachms.
Concentrated acetate of ammonia	...	...	3	drachms.
Rectified spirit of wine	...	...	4	ounces.
Tincture of belladonna	...	...	2	drachms.
Water	...	...	...	½ a pint.

Mix, and give the whole at once.

If pleurisy is suspected, give half-an-ounce of tincture of perchloride of iron, along with half-a-draught of quinine, in half-a-pint of water.

Repeat every six hours.

If the bowels are confined, a few—say four—tablespoonfuls of linseed oil can be added to a small bran mash daily, until the constipation has been overcome.

However, veterinary skill is always called for if the owner has reason for suspecting the onset of this untoward complication, and it is not infrequent.

For the bilious form, 30 grains of calomel may be added to a diuretic ball.

If there is pain in the belly, give half-an-ounce of chlorodyne, two ounces of sweet spirit of nitre, and six ounces of brandy, in a pint of cold water.

Bran and linseed tea, steamed oats, carrots, etc., along with eggs and milk and a little brandy, will help to support the strength, and thus aid the depressed circulation to re-establish itself.

Tonics and mild exercise form the basis of convalescent aids.

Dropsy. Dropsy of the chest, beneath the skin, within the belly, and (exceptionally) of the brain, are the chief forms.

Dropsy is but the outward expression of disease somewhere else.

Heart-disease, kidney- and liver-disease, are frequent causes.

Dyspepsia. See Indigestion.

E

Eczema. This is a non-contagious skin-affection, characterised by congestion and the subsequent formation of vesicles. When these latter are mature, they rupture, their contents drying upon the surface, forming hard tear-

like masses. The disease can be either acute or chronic. The chronic variety is frequently seen upon the inner surfaces of the knee and hock, constituting the well-known mallenders and sallenders. It is on the flexor surfaces of the joints. Its technical name is "psoriasis." Defective nutrition is probably at the bottom of the whole affair.

Treatment. Give half-an-ounce of Fowler's solution of arsenic in the food or drinking-water night and morning. Apply tar ointment or chrysophanic acid ointment to the sore places every night.

If the surface is moist, use in place of the ointments a lotion, composed of a drachm of creolin, one ounce of laudanum, and eight ounces of water.

Give good food, and plenty of it. Change diet. Continue treatment for several months.

Elbow, capped. A common cause of this is constant bruising of the soft tissues at the point of the elbow through the heel of the shoe. It also occurs in unshod horses, or those at grass.

At the beginning, it is a serous abscess, but leads up to the formation of solid fibrous tumour. As a preventative, an elbow-pad can be worn.

The insertion of a seton does good, causing a gradual wasting of the swelling.

Another plan of getting rid of the tumour-like formation, is by putting an india-rubber ring around the base of the swelling, the constant pressure of the ring causing the tumour to die (cutting off nutritive supply), subsequently sloughing away. Excision is frequently practised.

Elbow, wounds of. A wound in this region may lead to, or produce at once, an open joint (which see).

The movements of the hip sometimes exert a suction-

like action, drawing air into the tissues beneath the skin (emphysema), causing distension of it.

If left quiet, the animal will regain its normal condition.

Eyes, inflamed (ophthalmia). Inflammation of the mucous membrane lining the eyelids is not uncommon. The causes are variable, but a hay-seed, thorn, cold, chemical and other irritants, are the usual agents in bringing it on.

Treatment. Keep in a dark box, and apply a lotion composed of two drachms of Goulard's water to every eight ounces of cold water. Bathe the eye or eyes several times daily with this lotion.

If neglected, this disease may permanently damage the sight. It is not uncommon to find the clear portion of the eye opaque, the opacity as a rule disappearing under appropriate treatment. If a foreign body is the cause, then the first thing is to remove it. Examine the eye very carefully. In one form of influenza the eyes are affected. (*See Horse Distemper.*)

F

Farcy. *See Glanders.*

Feet, inflammation of. A very common affection, popularly known as "fever in the feet," "founder," and laminitis.

It is a disease more prevalent amongst the lighter breeds of horses, probably because the degree of concussion is greater; though, be it understood that heavy draught-horses are not uncommonly affected with it.

One attack predisposes to others, repetitions of which are readily observed by reference to the feet, the wall of the hoof-horn becoming arranged in an irregular, ringed manner, whilst the sole assumes a flattened form.

The congestion of the feet often leads to a separation of

the "sensitive" structures on the pedal-bone, from the "insensitive" laminae on the inner side of the hoof-wall. This allows the coffin-bone to descend; therefore it occasionally happens that the point of bone projects through the sole at the toe. The term "dropped sole" is applied to this part when it has taken on the flattened condition—usually the outcome of foot-founder.

Causes. Concussion; exposure to damp or cold; change of inflammation or congestion from some other part of the body, *e.g.* lungs; standing constantly on one foot through lameness in the other; feeding on wheat, etc., etc.

Symptoms. One, two, or all four feet may be affected, but the fore-feet are those commonly diseased.

The feet are hot and painful, which is rendered particularly evident when tapped with a hammer.

It is quite likely that the animal refuses to budge a step, and when compelled to do so propels itself forward (if disease is in the fore-feet) by a dexterous manipulation of the hind-limbs.

The attitude is characteristic.

When all the four feet are participating in the diseased activity, they are bunched together under the body as much as possible, and the heat in them is greatly increased. The pulse is full and strong. The pain appears to be intense, the slightest movement causing the horse to shake from head to feet, perhaps falling to the ground for relief. The bowels are constipated; appetite lost; and thirst is considerable.

Fat, heavy draught-horses are those in which the malady assumes its worst form.

As a rule laminitis is not a fatal affection, but its results are damaging.

Treatment. After the animal has been got into the stable have the shoeing-smith sent for to remove the shoes.

This done, put on cold bran-poultices, and keep these *constantly* cold.

In our opinion, every case of laminitis should be treated at the outset with cold applications, and after twelve hours with hot ones, but considering the many drawbacks which these latter often entail, it is our intention to recommend the continued use of cold bran-poultices. Experience has proved to us the fallacy—and even danger—of asking horse-keepers “to keep the heat up!” Such is often an impossibility. Cold is infinitely superior to *irregular* heat.

The shoes removed, poultices applied, the next thing may be that of trying to persuade the horse to lie down. If there is severe pain, and a short deep dry straw-bed has been provided, there need not be much difficulty in pushing the animal over. We do not advocate the use of slings for this affection.

A draught can now be given.

R.—Powdered Barbadoes aloes ...	... 3 drachms.
Hot water ... ... ...	... 2 ounces.
Add this solution to—	
Tincture of belladonna ...	... $\frac{1}{2}$ an ounce.
Bicarbonate of potash ...	... 1 ounce (dissolved in a little water).
Linseed oil ... ... ...	... 12 ounces.

Mix, and give the whole at once.

Having done this, leave the animal in charge of a trustworthy attendant, and return in six hours to administer the draught as follows:—

R.—Sweet spirit of nitre ...	... 2 ounces.
Tincture of aconite, B.P. ...	... 20 drops.
Concentrated acetate of ammonia ...	4 drachms.
Bicarbonate of potash ...	... $\frac{1}{2}$ an ounce.
Water ... ... ...	... $\frac{1}{2}$ a pint.

Continue to repeat the medicine at intervals of six hours, until recovery has sufficiently advanced.

Bleeding, or the “exercise treatment,” is quite uncalled for.

As recovery takes place, a little green food should be allowed, and daily exercise enforced, but not overdone. Give the latter on soft, wet ground.

Avoid putting to work too soon. Common-sense will be the best guide in the matter.

Feet, contracted. One of the most fertile causes of this is that of paring away the frog (foot-pad) until it is hardly worthy of its name.

By all means give frog-pressure—the more the merrier, so far as the horse is concerned. The smith need not take the trouble to practise horn-carving at his client's expense.

Narrowness or contraction of the heels constitutes unsoundness.

Fetlock, sprained. This is denoted by heat; pain and swelling.

Cooling applications, a bandage, and rest, constitute the main features of treatment.

Flatulent colic. See Colic.

Foot, pumiced. The hoof becomes elongated and flattened from above to below.

Foot, punctured or pricked. Whenever this happens, it is an accident demanding immediate attention.

A misdirected nail (through carelessness at times) may fall to the lot of the most skilful shoeing-smith. He takes care to immediately withdraw such, but the injury is *done*. The wound, if neglected, begins to suppurate, and the horse is exceedingly lame and ill. It is the pent-up matter that causes all this mischief. If an exit is not given at the sole, the matter burrows its way out at the coronet (quittor).

Whenever a horse begins to go lame shortly after being shod, have the feet thoroughly searched.

Treatment. Pare out the seat of the puncture until the sensitive structures are seen. The matter must have drainage. Now put the foot in a poultice, give a dose of

physic, and a few days' rest. Remove both shoes of course.

Foot, canker of. This is a very intractable disease, attacking the foot-pad and sole, emitting a most obnoxious odour.

Nothing short of an operation is the least use.

Founder of the feet. See Inflammation of these.

G

Gastritis. See Stomach, inflammation of.

Girth-galls. This is a common complaint amongst cavalry horses, and young horses.

The saddle shifts forward, and the girth galls the back of the elbow and the sides. Careless saddling, big-bellied horses, dried sweat, etc., are all causes.

Remove the cause. The girth can be strapped back.

Glanders and Farcy. So far as the cause is concerned, these are identically the same diseases.

Both are due to a *specific germ*, known as the *Bacillus malleus*.

Glanders can be either *acute* or *chronic*—usually the latter. Farcy answers to *both* these.

Glanders may end in *farcy*, or *vice versa*. Commonly, *both* are present at the *same time*.

Farcy is denoted by the appearance of the so-called farcy “buds,” or “buttons.” It is the skin-form of glanders, though in reality the absorbent vessels are the most affected.

Both diseases are incurable, and scheduled under the Contagious Diseases (Animals) Act.

This Act compels the owner to report a “suspect” to the nearest Local Authority, with the least possible delay. If certification shows the affection to be either glanders or farcy, the animal or animals will be ordered to be destroyed straight away.

The new method of detecting glanders is by the injection of *mallein*.

Chronic glanders is denoted, in most instances, by a discharge from one nostril, usually the left, and the appearance of "punched"-out ulcers within the nose. There is a cough, and the gland or glands beneath the jaw are hard, fixed, and swollen.

Sometimes there is no visible ulceration within the nostril (occult glanders).

In the acute form there is a high degree of fever and a citron-coloured discharge from the nostrils.

In farcy, the limb swells, often to a great extent, and the vessels (lymphatics) are cord-like.

In the acute form the limb is very hot and painful.

The disease is capable of transference to man by inoculation, in whom it is an equally grave affection.

The utmost precautions are necessary when dealing with a glandered (or "suspected") horse.

Immediate isolation of the diseased is essential.

Grease. This is a skin-disease, affecting the limb or limbs of the horse. As the name implies, the part affected has a sticky and greasy feel. The hind-limbs are often affected, and large grape-like formations take place. Thickening of the skin and tissues beneath often causes the lower portion of the limb to assume a most unwieldy appearance.

A soft or lymphatic temperament predisposes to grease.

Irritating discharges don't improve matters. A greasy limb causes the part to have an objectionable odour.

Treatment. If grapy tumours have formed, these can be removed by burning them off with the actual cautery, *i.e.* a hot flat-iron (blacksmith's shovel). When there is merely a slight greasy feel about the part, dust it over twice daily with equal parts of powdered boracic acid,

alum, and kaolin powder. If an ounce of each of these be used, 20 grains of carbolic acid can be added to the mixture.

Give an occasional diuretic ball, and plenty of green food.

Poultices are needed in some cases.

A bandage can be put on after the powder has been used.

Half-an-ounce of Fowler's solution of arsenic, given in the food twice daily and continued for three weeks at a spell, and then a mild dose of physic, will be found about the best means of getting rid of this nasty complaint. Repeat the arsenic in a few days after the purgative, and continue this line of treatment for three or four months.

Keep the diseased part very clean.

Gripes. See Colic.

Grunting. Some horses will make this noise when an attempt is made to strike them. It is often resorted to for the purpose of ascertaining whether the horse is a "roarer," though grunting is not necessarily associated with any respiratory defects.

A horse may be sound, yet grunt.

H

Heart, fatty degeneration of. This is a diseased condition, and one which must be regarded as a sign of "under"-nutrition, whereas fatty infiltration results from "over"-nutrition.

Aged and worn-out horses are not uncommonly after death observed to have their heart in this state.

The organ is pale in colour, soft, and flabby, with a greasy feel.

Here and there a fatty patch will be seen; less frequently one side of the organ is affected. A fatty patch on the

right side predisposes to sudden death through rupture of the organ, fatty tissue being incapable of fulfilling the duties assigned to the muscular tissue composing the heart, which has been "replaced" by the fatty material. The liver may suffer the same change.

Heart, fatty infiltration of. The heart may be entirely embedded in fat, and yet quite healthy so far as its intimate structure is concerned.

Very fat animals have often their heart in this condition

So long as the deposit of fat does not interfere with the movements of the organ, there need be no fear of harm.

The oily material is simply poured in between the fibres (does not replace them).

Heart, dropsy of. *See* Dropsy.

Hock, capped. In ordinary parlance, this means any swelling situated upon the point of the hock, forming as it were a cap over this.

Playing over the point of the hock, there is a flexor tendon (*flexor pedis perforatus*), the expansion of which forms a cap.

Now, between the tendon and the bone there is a lubricating membrane, while between the former and the skin there is a similar apparatus.

Either of these may be the seat of capped hock.

The "capping" of the hock may be formed out of the thickened skin, or tissues subjacent to this, to "dropsy" beneath the skin (commonest form of capped hock); dropsy between the bone and tendon; or disease of the tendon, or the point of the hock. If the tendon, where it plays over the point of the hock.

Causes. Some form of external bruising.

Very often capped hock is a sign of an inveterate kicker, but its presence may be purely of accidental origin.

In reality, it constitutes unsoundness.

When purchasing a horse, care must be exercised to avoid deception with reference to its origin.

Symptoms. Look very carefully at the points of the hocks, standing a little to one side, when it will readily be observed. If the point or points of the hocks have just been bruised, then there will be increased heat, pain and swelling. Not so with an old capped hock. When the disease is located in the tendon, it has a very hard feel ; on the other hand, dropsy beneath the skin and tendon confers an elastic resistance.

Lameness may or may not be present. Usually not.

Treatment. Supposing that the injury has just happened, and that the tip of the hock feels swollen and hot, then you must use the lotion, at once, as below—

R.—Tincture of arnica	...	...	...	1 ounce.
Goulard's water	...	...	...	$\frac{1}{2}$ an ounce.
Laudanum	...	...	...	2 ounces.
Water	...	...	...	1 pint.

Mix, and make a lotion.

Directions.—Apply the liquid to the hock four or five times each day, by means of a pad of tow soaked in it, and kept in position by the use of a flannel bandage, applied rather tightly. Rest, and the application of a high-heeled shoe, will assist matters towards a favourable issue. After the inflammation has subsided, try the daily application of equal parts of iodine ointment and red-blistering ointment.

The above treatment must be persevered with for several days.

Hock, inflamed. See Bog-spavin.

I

Indigestion. The horse is a frequent sufferer from digestive disorder, and no wonder when one comes to consider the disrespectful way in which some proprietors of this slave treat his digestive apparatus. By some, the horse's stomach is regarded as a corn-box, capable of being filled—distended—at pleasure ; others go to the opposite

extreme, believing that such substances as cabbage-leaves and straw will satisfy the demands of the economy. Both practices are equally pernicious ones ; whilst under-feeding, improper food, and irregular feeding are the main causes of the horse being so frequently the subject of digestive disturbance.

There is a disorder known as "stomach-staggers." This is acute indigestion. Its causes are dietetic.

Symptoms. Pain in the belly (colic), indicated by restlessness, or rolling and rising. The pain is not continuous. It often happens that the horse has a staggering gait (hence the name), and seems sleepy (sleepy staggers) perhaps pressing his head against the wall.

The pulse under these circumstances is "slow."

Sometimes the pain continues in this way for two or three days, but the body never becomes covered with cold sweats (unless it is going to terminate fatally); the face does not assume the anxious expression seen in inflammation of the bowels, neither does the pulse take on a settled "wiry" feel.

Treatment. Give a purgative, in order to rid the alimentary canal of irritating material. The following will answer :—

R.—Powdered Barbadoes aloes	...	6 drachms.
Dissolve in hot water	...	6 ounces.
And add—		
Tincture of belladonna	...	$\frac{1}{2}$ an ounce.
Sweet spirit of nitre	...	2 ounces.
Bicarbonate of potash	...	1 ounce.
Water	...	$\frac{1}{2}$ a pint.

Mix, and give the whole straight away.

Some people believe in blood-letting, provided the horse is a suitable subject.

Three or four quarts can be withdrawn.

Allow plenty of warm water to drink.

Mustard can be applied, as a paste, to the belly, but wash it off in a quarter of an hour. The pain and other evil symptoms will disappear as soon as the purgative has had time to act; but do not leave the animal whilst it is in pain.

If the latter continues, give one ounce of tincture of opium, along with one ounce of aromatic spirits of ammonia, in half-a-pint of warm water.

Allow sloppy food. Feed carefully.

Inflammation. Any portion of the body, either externally or internally, may become the seat of inflammation. The causes are either irritation or injury. Specific inflammations are those arising from special causes.

The cardinal signs of inflammation are heat, pain, redness, and swelling. The redness is not seen in pigmented parts.

Treatment. To subdue the inflammation (removing the cause whenever possible), and allay the pain. Cold applications in the early stages, followed by warmth.

Laudanum and belladonna (half-an-ounce of each, the latter as tincture) internally. Give the draught in water.

Influenza. *See* Distemper of Horse.

Intestines, inflammation of. *See* Bowels, inflamed.

J

Jaundice. This is symptomatic of a diseased or disordered liver.

It appears to be the result of absorption of bile pigments and then subsequent distribution in the blood-stream throughout the body.

It is denoted by yellowness of the white portion of the eyeballs, saffron-tinged mucous membranes, slow pulse, torpid bowels, indisposition, etc.

Pain, when the liver is pressed behind the ribs, on the

right side. Sometimes there is lameness in the right fore-limb.

The dung is clay-coloured.

Treatment. The so-called "biliary fever" is one manifestation of influenza.

In most instances, good results from thirty grains of calomel and one drachm of physic ball-mass. In the drinking-water add half-an-ounce of sulphite of soda daily.

If the bowels become too loose, stop the medicine.

No purging must be allowed if the congestion is an accompaniment of influenza.

A very useful agent is dilute nitric acid. Of this liquid two drachms can be added to a small bran-mash, night and morning.

General management. Non-stimulating diet.

Joint, open. The hock, fetlock, and knee are those most frequently punctured. When a joint is punctured, a glairy (white-of-egg-like), semi-fluid issues therefrom. This then is called "open-joint."

What is known as an open bursa is not so serious as an open joint. The last-named is often very stubborn to treat successfully.

It is not necessary that the joint be opened at the time of injury. Subsequent sloughing is capable of bringing this about.

Symptoms. The joint and its structures around are acutely inflamed. This is denoted by swelling, heat, and, if the horse is down, inability to rise will likely be present.

Usually there is considerable systemic disturbance, demanding early treatment.

Treatment. Let us suppose that the joint has just been opened and that it is the hock. What are we to do?

Put the horse in slings at once.

Apply cold-water fomentations (see these latter) to the

joint, and at the end of each act lay on a pad soaked in oil of cloves. Put a bandage and tow tightly over the whole. Do not interfere with the wound for three or four days. It is an excellent plan to cover the pad—soaked in the oil of cloves—with iodoform gauze. A physic ball—not exceeding four drachms—may be administered.

It is very important not to tamper with the wound, because this would re-open the joint if it be healing. Again, care must be exercised in order to guard against infecting the wound.

Supposing that the injury is not a recent one, and that the joint-lubricant has been flowing out for some time? Under these circumstances, we think that the best plan is that of applying a smart cantharides blister over the swollen joint and all around the sore.

This treatment excites a more vigorous inflammation, whilst the increased swelling closes the wound.

Stiff Joints. The joints—particularly the knee and hock—may become sealed by deposition of bony matter around their articular surfaces. This is termed “ankylosis.” The ligaments often participate in the diseased activity.

Ankylosis (permanent fusion) of the vertebræ of the loins is not uncommon in old horses and hunters. In the latter, it is a serious defect, whilst in both it predisposes to fracture in this region. The so-called occult (hidden) spavin is nothing less than fusion of the tarsal- (hock-) bones.

Ankylosis, wherever situated, must constitute unsoundness.

This stiffening commonly arises from an injury to the joint, especially at the knee.

A stiff-kneed pony will manage to do some kind of labour, and there is no pain, although it may be very lame.

K

Kidneys, inflamed. Inflammation of the kidney or kidneys is not a common disease in the horse, either as an "acute" or "chronic" affection. A blow over the loins, cold, abuse of diuretics, etc., will cause it.

Symptoms. There is pain over the loins when the animal attempts to urinate; straining, perhaps pain in the belly (colic), and a urinous odour given off from the skin. If any urine is passed, it is only very small in amount and highly coloured.

Treatment. Place the animal in a very warm stable. Clothe the body, and bandage the limbs.

Apply mustard-paste to the loins, washing it off in about half-an-hour's time.

Having done this, give the following draught:—

R.—Barbadoes aloes	...	...	5 drachms.
Tincture of belladonna	...	2	drachms.
Tincture of ginger	...	...	½ an ounce.
Chloric ether	...	...	1½ ounces.
Aqua	...	...	½ a pint.

Mix. Dissolve aloes in water.

Directions.—Give the whole at once, and repeat every six hours, omitting the aloes.

An improvement is denoted by diminished pain and the flow of urine.

Knees, broken. The term "broken knee" is commonly employed to indicate any form of wound to the knee or knees, no matter whether such be the mere grazing of the skin, or one in which the joint is opened, or even the bones fractured.

Commonly, an injury to the knee is the result of a fall, the gravity of which is determined by the condition of the ground upon which the accident happens. The harder and more flinty the road, usually the greater the degree of injury.

Some horses, *e.g.* "speedy cutters," are very liable to stumble. Careless driving may cause the horse to fall, but we must never be too ready to lay the blame to the driver, because such accidents will and do often happen to the most expert horsemen and drivers.

Symptoms. When the skin has been merely bruised there may be nothing but a little swelling to indicate this, with of course a slight degree of stiffness in the joint owing to the latter.

In other cases, the tendons may be exposed, the joint opened, or one or more bones fractured.

If this has happened, there will be a thin glairy discharge issuing from the wound, the discharge being increased when the animal moves the limb. The glairy liquid is the so-called joint-oil. Its presence is always indicative of serious injury; in fact it points to one of the worst forms of "broken knee."

When the bones of the joint are broken, recovery may take place, but it is always, we believe, attended with permanent stiffening of the joint. Previous injuries to the knee or knees may show nothing but discolouration of the hair—darker than the rest, or one or two grey or white hairs.

Treatment. If through "speedy cutting," attending to shoeing, or the application of a boot, must be the owner's first thought.

Bruises will gradually disappear themselves in two or three weeks, but deeper injuries may require a couple of months' rest for repair to take place. When the skin is simply bruised, use the following lotion three times daily:—

R.—Sal ammoniac	...	...	1½ ounces.
Common salt	...	...	2 ounces.
Methylated spirit of wine	...	...	6 ounces.
Cold water	...	...	1 pint.

Directions.—Soak a linen bandage in the lotion, apply it loosely around the joint, covering the whole with an ordinary flannel one.

Fasten the head to the pillar-reins.

If the skin is broken, the first thing to be done is that of cleansing away any dirt, grit, etc. Neglect of this might lead on to lockjaw. Having seen this properly done, dress the wound with creolin lotion (2 drachms to every pint of cold water). Apply the lotion with a piece of tow and a bandage.

It is a very good plan to sponge the knee with the lotion for about half-an-hour night and morning.

In three or four days, substitute the following ointment for the lotion :—

R.—Iodoform powder	...	...	20 grains.
Boracic acid ointment	...	...	1 ounce.
Red oxide of mercury ointment		$\frac{1}{2}$	an ounce.
Oxide of zinc ointment	...	$\frac{1}{2}$	an ounce.
Mix. Apply twice daily on tow.			

When the joint has been punctured, it is advisable to apply a little pad of cotton-wool (steeped in oil of cloves) over the part from whence the glairy liquid is escaping. Do this every third or fourth day, but don't dress the knee any oftener than this under these circumstances.

The horse should be kept on the pillar-reins the whole time.

L

Labour, mare in. The mare may foal either in the standing or lying attitude. The immediate signs of commencing labour is that of pain within the abdomen. At the beginning the spasms are but slight and feeble, but as time rolls on they become stronger and more prolonged, until a final expulsive effort brings the foal into the world.

If the mare is standing, the creature glides slowly down the backs of the thighs and hocks, the fall rupturing the cord.

In some instances, the owner severs the cord with a knife, previously tying a piece of thin string around it.

A little bleeding is unimportant.

Before foaling, the mare should have a well-bedded dry loose-box set apart for her accouchement.

Noisy demonstrations of any kind ought to be rigidly avoided.

At first, perhaps, the foal won't be able to stand, but it is not very long before getting the use of its limbs. It then begins to look for the teats.

The milk usually appears in the gland about the time of birth.

After foaling, the mare should be kept warm; warm food given, especially such of a sloppy nature.

The "cleansing" or after-birth follows the birth of the foal. It should never be allowed to remain beyond twelve to twenty-four hours. Its retention beyond the specified time is a source of danger. It requires the exercise of considerable skill for its removal.

The utmost cleanliness must be observed about foaling-time.

Lice. The horse is now and then the subject of a lice plague.

Poultry-lice seem to flourish upon his skin, and these vermin often come directly from this source.

The cause should, if possible, be done away with, and the animal dressed with the lime-and-sulphur lotion recommended in the treatment of mange, or some other anti-parasitic agent.

Lockjaw (tetanus). This is a specific disease, being caused by living germs, each germ having the shape of a screw-eye.

These germs are constantly present in the soil of certain localities.

A trivial wound, such as a sore back, saddle- or collar-gall, puncture of the foot, etc., is quite as liable to be

followed by the appearance of lockjaw as when the wound is deep or extensive.

We have referred to it in Castration. (See this.)

At the best of times lockjaw is of grave moment, and a large number of deaths arise through it. Recoveries are not uncommon.

As no amateur would be likely to undertake the treatment of a case of this description, we consider it inadvisable to enter into a discussion of the symptoms and treatment.

One very important matter to bear in mind, is that of preserving the most perfect quietude. Noises of every description aggravate this malady. Even the careless opening of the stable-door will bring on a spasm.

Loins, strain of. Heavy draught-horses are those most liable to suffer injury in the region of the loins. A heavy weight falling on the back, or a heavy load, up- or down-hill, are both capable of producing strained muscles in this region.

The horse must have several months' rest, and the spine should be massaged daily.

A plaster of Burgundy pitch and rest in the slings constitutes the rest of treatment.

Lungs, congestion of (pulmonary apoplexy). *See* Pneumonia.

Lungs, inflammation of. *See* Pneumonia.

Lymphangitis, weed, or Monday-morning disease. This is a very common malady amongst horses working through the week, with a day of rest at the end of it.

The heavier breeds are very frequent sufferers.

The disease, in its acute form, is denoted by the sudden swelling of a fore- or hind-limb, commonly the latter, such swelling first beginning under the fore-arm, or upper and inner side of the thigh.

When the disease makes repeated invasions, the limb becomes permanently enlarged, consequently unsightly.

If the swelling is hard, yet the inflammation acute, the pain is intensified.

The causes are twofold :—The sudden cessation of work allows congestion of the lymphatic glands to take place. This is because the supply of lymph exceeds the demand—the machinery of expenditure being at its minimum.

The other factor is the ordinary quantum of food.

Weed then, we consider, is a congestion of the absorbents beneath the fore-arm or thigh.

Treatment. 1. *Preventative*.—Give half-an-hour's exercise on Sunday morning.

2. *Medicinal*.—Exercise freely. If bowels are confined, we must give a physic ball. Warm water can be applied to inner side of the thigh, etc., if needed.

By bandaging the leg, the swelling can be kept at the upper part.

A diuretic ball may be given on alternate days.

M

Madness. See Rabies.

Mallenders. See Eczema.

Mange. This is a parasitical skin-disease appearing upon the limbs, body, or both. It is very troublesome when a number of horses are affected at the same time, being a contagious disease, and in the Shetland Isles is scheduled as such. In every instance it is due to the transplantation of the parasite on to the skin. A pregnant female acarus, or the ova (eggs) are equally fertile in producing the skin-irritation which we recognise as "mange."

Three distinct varieties of these vermin attack the horse the commonest bearing the technical name of *sarcoptes*

equi. The two others are known as *dermatodectes* and *symbiotes equi*.

The first-named attacks the neck, mane, chest, back, and tail. If the parasites are allowed to continue their ravages, they will denude the body of its hairy covering.

Although always the result of infection—directly or indirectly—we believe that neglected or badly-fed animals are predisposed to suffer, or at any rate they form a suitable soil for the vermin to enjoy themselves. Being energetic, they are not long in making inflammation of the skin, though such is not easily seen upon certain parts of the cutaneous surface.

It must be understood that mange may happen in spite of good grooming, feeding, etc.

Symptoms. If a number of animals are grazing, or stabled together, then the spreading nature of the malady is fairly good evidence that the affection is mange (parasitic mange).

The skin being irritable, the animal will be seen rubbing itself against various objects, such as gate- or stall-posts, etc. The hair falls off in patches, and the skin becomes dry and scurfy.

Loss of condition follows.

The diagnosis of course rests upon finding the parasite.

To do this, take some of the encrusted matter off one of the sores and examine them carefully with a powerful pocket-lens. The parasite will likely be seen.

It does not matter whatsoever to the layman as to the variety of this, because the treatment is essentially the same for all.

Treatment. If there is only one horse kept, then you must take him out of the stable in which he has been living, and dress the body and limbs very thoroughly with the following lotion:—

B.—Flower of sulphur	...	...	...	2 pounds.
Slaked lime	...	...	...	2 pounds.
Water	...	...	...	7 quarts.

Boil the mixture down until it measures one gallon. Subsequently filter, and use as directed above.

It is the best way to rub the lotion in with the hands; but before doing so we always wash the animal with soft soap, hot water, and Jeyes' fluid in solution, having previously—in the case of long-haired animals—clipped off the superfluous hair. This facilitates dressing. This is chiefly applicable to colts, etc., which have been out at pasture for some months. If the dressing is properly applied, it will kill the parasites—*i.e.* the disease-producer—within half-an-hour.

No portion of the body-surface must be left untouched.

Having done this, the animal should not be allowed to return to the stable until the place has been thoroughly cleaned out with boiling water and soda, lime-whitening the walls, etc., with hot lime.

In every instance, the diseased must be kept separate from the healthy.

Dandy-brushes, curry-combs, chamois-leather, harness-padding, etc., must all have their share of attention in the general cleansing.

If proper measures are adopted, the disease should be got entirely rid of in any stud within three weeks or so.

Megrims. Vertiginous seizures coming on with apoplectic suddenness, usually whilst the horse is at work, and not unattended with danger if there be any one riding behind the animal. It is thought to be most frequent in harness-horses, attributed to collar-pressure. The pressure exercised by a tightly-fitting collar does undoubtedly prevent the free return of blood from the brain.

We believe, however, that animals with heart-disease are strongly predisposed to megrims.

It constitutes unsoundness, though its detection is impossible, as a rule, when a horse is examined for the latter by a veterinary surgeon. Its occurrence after certification by this authority would in no way render him liable for breach of faith. The horse usually shows no premonitory symptoms of the impending megrim-seizure.

Sometimes the animal stops and falls to the ground, struggling at once, or it may remain in the standing attitude the whole time.

Perhaps the shafts will be broken in the act of struggling. The attack lasts but a short time, though the horse may injure itself during the struggle.

As such animals are unsafe, we must recommend that they never be used for the conveyance of human life.

By keeping the bowels open, feeding upon soft and easily-digested food, the fits can be kept partly in abeyance.

If the horse is working in a collar, substitute the breast-band.

During a fit, remove the pressure by drawing the collar upwards and forwards.

The seller of a horse affected with megrims is rendered liable for any injury arising from such.

Mud Fever. This term is applied to an affection of the skin denoted by a scurfy eruption, especially about the limbs and belly, subsequently upon other parts of the body, due to the irritating effects of mud upon it. It commonly results from bad grooming, mud being allowed to accumulate upon the skin.

Horses thus affected are hide-bound, and unthrifty in appearance.

Treatment. Add half-an-ounce of Fowler's solution of arsenic to the animal's drinking-water every night, and in the morning a powder composed of half-a-drachm of iodide of potash, and 2 drachms of powdered nitre.

Each night give two tablespoonfuls of linseed oil in a small bran mash.

Allow linseed, carrots, crushed oats, and bran for food.

Muscles, sprained. Any muscle during severe exertion is liable to be over-stretched, but perhaps their tendons are those commonly strained, consequently the flexors of the fore- or hind-limbs are often found to be hot, thickened, and painful, with the horse resting the limb. Sometimes the muscles under the loins are injured, in hunters, especially during the "drop." It may happen that the horse is unable to rise on the morning following the hunt.

In addition to this, there is a high degree of constitutional disturbance.

This accident is known as sprain of the psoæ muscles. It may end in an abscess.

Purgatives, an occasional warm clyster of barley-water, with an ounce of laudanum added, and hot fomentations to the loins, comprises the chief rules for treatment of this injury, but skilled advice is necessary.

Recent sprains of the back-tendons are treated with warmth and moisture.

Apply a flannel bandage soaked in a cooling lotion as follows :—

R.—Methy.	spirit of wine	...	...	4	ounces.
Sal ammoniac	...	...	...	3	ounces.
Ice	...	...	...	$\frac{1}{2}$	pound.
Salt	...	...	...	3	ounces.
Cold Water	...	...	...	1	quart.

Dissolve.

Over the flannel bandage, apply another dry warm flannel bandage, taking care to use both evenly, thus allowing the pressure to be equable.

Chronic inflammation of the tendons is frequently treated surgically.

N

Nail-bound. This is a term applied for the purpose of denoting that one or more nails are driven too tightly home, the resulting pressure causing the animal discomfort, perhaps lameness. If suspected, remove the shoe and fasten not so tightly.

Nasal Gleet. By this we mean a discharge from one or both nostrils, either of a temporary or permanent nature. In reality it is but a symptom of disease, and before attempting to cure this condition an effort must be made to ascertain the cause of the flux.

Causes. Disease of the upper or lower molar teeth ; chronic catarrh (cold) ; inflammation of the mucous membrane lining the nasal and air-chambers in connection therewith ; pus in the guttural pouches. In glanders, strangles, influenza, etc., a nasal discharge is common.

Ulceration of the nasal mucous membrane is a sign of glanders, so that care is necessary when examining a horse thus affected, in fact with any nasal discharge.

Treatment. As already stated, an effort ought to be made to ascertain the cause.

There will be no difficulty in the case of a horse suffering from influenza or strangles.

Usually, the nasal flux ceases when recovery has been completed.

The same may be said of acute catarrh. Steaming the nostrils with hot water and camphor will do good in the last-named.

Diseased teeth will require operative interference for their removal.

It may be needful to open the air-sinuses in order to wash the same out after the discharge has been allowed to escape.

A bulging of some part of the bone, and a dead sound when the bone is struck, indicate an accumulation of matter beneath.

The insufflation of iodoform powder, daily, does good when the discharge arises from prolonged inflammation of the nasal mucous membrane.

Navicular disease. This is an incurable malady affecting the navicular-bone, its cartilage, bursa, synovial membrane, and tendon gliding over its surface.

It is a very common complaint, and almost always confined to one or both fore-feet.

Horses thus affected are vulgarly termed "groggs," and their action is spoken of as being "groggy."

The short cat-like step is very characteristic of the disease, though this is not so evident if the malady is confined to one limb.

In order to destroy the pain arising from this affection, an operation known as unnerving (neurectomy) is frequently practised. This operation in no way does away with the disease—merely the pain.

An unwary purchaser may quite easily be taken in by having an unnerved horse palmed off as a sound animal.

So far as the purchaser is concerned, such an animal is worthless, though we do not say useless for work.

The nerves are divided in the hollow just above the fetlock-joint, so that careful scrutiny at this seat is necessary. The presence of a slight scar here points to this operation having been performed. However, it is quite easy to confirm one's opinion by pricking the foot below this part. It (the animal) does not respond to the stimulus thus applied. In other words, sensation is lost after the nerve has been cut and a portion taken away.

Symptoms. Pointing of the foot (shoe worn at toe); lameness as soon as horse leaves stable, which may dis-

appear after the animal has been trotted or warmed up a bit with work. Upright pastern or pasterns; wasting of the muscles of the shoulder; wasting of the frog or frogs; absence of disease in other parts of the limb; pointing of the foot or feet when at exercise and in the stable.

Treatment. Careful shoeing. Keep the toe short. The operation of neurectomy by a veterinary surgeon. Shoe with a leather sole. At its best, treatment is but palliative.

Nettle-rash (*urticaria*). Nettle-rash is rather a frequent complaint in the horse.

It is characterised by the sudden appearance—and equally sudden disappearance—of numerous elevations upon the skin, varying in size from a threepenny-piece to half-a-crown. It is attended with a considerable degree of irritation.

Although a comparatively mild affection, it is one which indicates disturbed digestion, and, it may be, nerve-irritation.

Treatment. Bathe the elevated patches with a solution of baking soda—one ounce to a pint of cold water. Anointing the places with zinc or boracic acid^{*} ointment is also useful. The same may be said of Goullard's lotion and white lotion (*see Lotions*). Internally, four drachms of aloes and twenty grains of calomel can be given, unless the bowels are loose enough. Add half-an-ounce of bicarbonate of potash to the animal's drinking-water every morning and evening. Give a change of diet. Green food may be tried. A diuretic ball can be used instead of the powders, giving the last-named every other day for several days.

Nose, bleeding from (*epistaxis*). Bleeding from one or both nostrils is now and again seen in the horse. Its occurrence has been noticed after an injury to the bones in this region. It may happen after the removal of a polypus. In a disease known as *purpura hæmorrhagica* (*see this*), it is

not uncommon. In addition to those named, there are other causes.

Treatment. Syringe out the nostrils with warm and cold water (alternately).

○

Open-joint. *See* Joint, open.

Ophthalmia. *See* Eyes, inflamed.

Over-reach or tread. This is an injury to the band running around the top of the hoof, otherwise called the coronet.

Very commonly it is caused by the shoe of a hind-foot striking against it, sometimes through the habit of standing with one foot over the other.

Long fetlocks predispose to the injury. It is an unsoundness.

The coronet-band feels hot, looks inflamed, and causes considerable lameness.

Treatment. Have the shoe taken off. Put the foot into a bath of hot (not too hot) water, and allow it to remain here for an hour or two.

Having done this, put on a warm bran and linseed poultice.

Continue this treatment until skilled advice can be got.

A tread may, if neglected, end in ringbone or quittor.

P

Paralysis. The entire control of the body may be lost (total, complete, or general paralysis), or some particular member may become paralysed (partial paralysis). Instances of the first are seen in azoturia (see this), and certain brain and spinal-cord affections. Paralysis of the

eye, tongue, cheek, lip, bladder, bowels, and a fractured limb, afford examples of local paralysis.

As a rule the causes of complete paralysis in the horse are very difficult to determine, just as difficult as it may be to ascertain whether the whole or only a portion of the body is paralytic, provided the paralysis is in connection with the trunk. Old horses frequently become paralytic, though we believe that this is more correctly regarded as loss of power through—in many instances at least—sheer exhaustion, especially if the animal has been half starved. Paralysis of the tongue, cheek, lips, and male generative organs are but rarely benefited by treatment.

The bladder may be paralysed through over-distension with urine.

Fracture of one or more of the bones of the spinal column happens now and again. There is complete loss of control and sensation behind the seat of injury. Disease of these bones predisposes to this accident.

Disease of the kidney is another cause of paralysis.

The treatment will entirely depend upon the seat and cause of the paralytic condition. Strychnine does good in some instances, but its use is only safe in the hands of the professional man.

Parrot-mouth. The upper incisor teeth project in front of and over the lower incisors.

In "reversed" parrot-mouth, the lower incisor teeth project upwards and outwards in front of the upper incisors.

Peritonitis. By the use of this term we imply inflammation of the delicate membrane covering the bowels. It is commonly associated with inflammation of the latter, and its course, symptoms, and treatment follow so closely bowel-inflammation, that we deem it inadvisable to enter into a discussion of the malady. (*See Bowels, inflammation of.*)

Pink-eye. *See* Horse-distemper.

Pleurisy. The lungs are covered by a serous membrane known as the pleura. This may become inflamed, either alone, or else along with the lungs. It often occurs during an attack of influenza. The danger of this disease chiefly lies in the tendency which there is towards the accumulation of watery fluid (effusion) within the cavity of the chest. If this happens, and the amount of accumulated liquid is great, its withdrawal by operation becomes a necessity, though it may not be successful.

A short, suppressed cough ; ridge running along the floor of the belly ; hard, small, and quick pulse ; high temperature, and sighing are the usual symptoms.

Dropsical swellings beneath the skin, and difficult breathing, point to the presence of liquid in the chest.

Treatment. Mustard-paste ought, in our opinion, to be well rubbed into the walls of the chest, and washed off in about a quarter or half-an-hour.

The body must be well clothed, and the limbs bandaged.

If necessary, the mustard application can be repeated.

The pain can be overcome by the use of morphia, preferably as an injection beneath the skin.

About 30 grains of opium in the form of a ball can be given with the same view.

When liquid begins accumulating in the chest, the pain diminishes. This is not a good sign.

An ounce of sweet spirit of nitre, and half-an-ounce of salicylate of soda, given in a pint of water, twice daily, can be tried, before the watery accumulation takes place. In every instance we should recommend that professional advice be sought at the onset of the malady.

Pneumonia. Inflammation of the lungs is a fairly common disease of the horse. Its first stage is that of

congestion or engorgement, and the second and final, consolidation.

A sudden congestion of the lungs appears rather frequently amongst hunters which have not had proper preparation before the season begins. Over-heated and damp stables are capable of bringing it on.

It is probable that some forms of lung-inflammation have their origin through the presence of germs.

If in a hunter in the field, the disease is denoted by the animal coming to a sudden standstill, breathing rapidly and having a small quick pulse—perhaps 100 per minute.

Anxious expression of face, and coldness of the body, and beating of the flanks, are additional symptoms.

Treatment. Dismount, ungirth, and turn the horse's head in the direction of the most fresh air. Hand-rub the extremities. Half-a-pint of whisky can be given to the same quantity of water, but the treatment is that of bleeding the horse. From six to eight quarts of blood should be drawn straight away. To neglect this is simply tampering with the animal's life.

Other forms of lung-inflammation should be placed in the hands of the veterinary surgeon.

Poll-evil. By this term we mean an abscess or suppurating sore upon the poll.

It is commonest in cart-horses and ponies working in coal-pits. At the beginning, it is simply a bruise running on to a watery swelling, the bursting being followed by infection and suppuration.

Treatment. In the early stage, cooling applications, in order to try and subdue the inflammation. If matter forms, the abscess will require lancing, and then treating as an ordinary wound. The worst feature about poll-evil is the tendency for the pus to burrow between the muscles. If

this happens, it is necessary to operate, so that free exit can be given for its escape.

Polypi, nasal-, etc. A polypus is a pedunculated (stalked) tumour growing from mucous membrane. As a rule, the favourite places for these to grow upon are the membranes of the nose, rectum, vagina, etc.

Their removal, when accessible, can be effected by putting a piece of catgut around the base of the polypus. Bleeding is thus avoided.

Sometimes these tumours are composed of bone; then their excision is more difficult. The écraseur has been used for this purpose.

Purpura hæmorrhagica. This malady occasionally follows upon influenza or strangles, and other debilitating diseases.

It is denoted by the appearance of swellings upon the skin, especially about the head and limbs. In course of time sloughing begins, and dark-coloured blood oozes therefrom. Blood may also issue from the nostrils. The mucous membranes are covered with purple spots.

The treatment should be left in the hands of the veterinary surgeon.

Q

Quarter, false. A false quarter is a fissure or depression in the wall of the hoof, situated at the quarters.

It appears to result from a defective secretion of horn, brought about through an injury to the coronet. It is an unsoundness, predisposing to sanderack, owing to a weakening of the horny wall.

Treatment. Remove the pressure off the wall at this part, through the use of an indentation in the shoe, or by paring a notch in the horn.

A blister to the coronet may be tried.

Quittor, or fistula of the foot. This is a very common disease of the foot, either fore or hind, more frequently the former.

Its presence is indicated by the formation of one or more running sores around the top of the hoof, previous to the appearance of which the coronet is hot, swollen, and painful.

By far the commonest cause is a puncture to the sole of the foot, either through a misdirected nail during shoeing, or an injury inflicted in some other manner.

The original wound being closed up, prevents the exit of matter, which now makes its way up the foot, finding it convenient to discharge itself at the coronet, which being tough but elastic, prevents the formation of a proper abscess, therefore one or more sinuses or channels are formed instead.

These latter are quite incapable of drawing the matter completely away, so that chronic suppurating sores result.

Treatment. 1. *Preventative.*—When the foot has been punctured, have the part kept clean and dressed with an antiseptic lotion, such as creolin. If matter has begun to form, pare the foot (sole) well out, in order to give free exit to the discharge, which must be encouraged in its descent, through the use of some bran poultices.

2. *Medicinal or surgical.*—The fistulous sores must be opened to their depths, so as to convert each into a healthy healing wound. It is simply useless trying to heal them from the surface, because fresh sinuses will form at an adjacent part.

The so-called "bottoming" of the sinuses may often be attained by inserting a red-hot piece of wire into the depths of each fistula, though it is a painful process.

A radical cure can be effected by means of the removal of a portion of the cartilage (lateral cartilage) situated at the side and back of the hoof.

We would recommend this operation as being the best and least expensive in the long run.

Treads on the coronet must be treated by the use of cooling lotion, and then moist warmth after 48 hours. Rest is essential, and a mild dose of physic should have a salutary effect.

R

Rabies. The horse has been known to suffer from this disease, and it is always the result of a bite from a rabid animal, usually a dog. It is a specific malady.

Ranula. A ranula consists of a swelling beneath the tongue. Its precise cause is not well understood.

Rectum, protrusion and rupture of. Protrusion of the rectum is the result of straining, either during foaling, or else through constipation.

Old age and debility predispose towards it. The protruded portion requires cleansing and then returning.

Rupture of the rectum is not very uncommon in the mare. In her it has been produced through false service, *i.e.* per rectum.

A vigorous vaginal copulation has been said to have produced it, the pressure being brought upon the upper vaginal wall.

Pain comes on shortly after service. It appears to be always fatal.

Rheumatism. The horse is a tolerably frequent sufferer from rheumatism, though perhaps most frequently from the chronic form of the malady.

Foals are common sufferers from acute inflammation of the joints.

Again, influenza commonly assumes a rheumatoid form, particularly if the constitution be predisposed.

Repeated attacks of articular rheumatism lead to the permanent stiffening and enlargement of the part affected.

The most characteristic feature of articular rheumatism is its tendency to shift from one joint to another without the slightest apparent warning.

The joint or joints are hot, painful, and swollen. The fetlock and knee are common locales for this to happen in. Sometimes there is a high degree of fever (rheumatic fever).

Treatment. A dry bed and warm dry apartments are absolutely essential to successful treatment. Clothe the body well, and don't allow the least draught to enter the stable. To the swollen joints apply cooling lotion (never use fomentations of warm water or liniments in acute attacks), such as iced water or sal ammoniac and saltpetre (1 ounce of each to a quart of water).

This lotion can be used by dipping lint into it, and then covering the whole over with a bandage soaked in vinegar and water.

Foals require the same treatment, so far as external applications are concerned.

Internally, give the animal the draught as follows, twice daily :—

R.—Salicylate of soda 2 drachms.

Iodide of potash 50 grains.

Bicarbonate of potash $\frac{1}{2}$ an ounce.

Direction.—The whole to be given at once in half-a-pint of water.

To foals give the following powder thrice daily :—

R.—Iodide of potash 20 grains.

Dover's powder 5 grains.

Bicarbonate of potash 10 drachms.

Salicylate of soda 40 grains.

Mix. Give in eight tablespoonfuls of tepid milk. Get a dozen of these powders made at the chemist's.

For chronic rheumatism, the best treatment is massage for half-an-hour, twice daily.

General management. Cold water to drink. Sloppy, but good food. Milk, with a dessertspoonful of carbonate of soda, can be given as a drink. Linseed and bran mashes. If the bowels are obstinately confined, give a clyster. To foals, two or three ounces of castor oil. A little green food, if possible.

Ringbone. This is a bony enlargement upon the pastern-joint or a little above it. The first seat of disease confers the title of "low," and the second "high" ringbone. Both these can be detected, we believe, with the aid of the X-rays, though the usual method is by the sense of touch, and when large, by the sight. As a rule, the ring of bone is incomplete.

It is the result of an acute inflammation of the covering of the bone, and the bone itself.

Although ringbone may appear upon the fore-limbs, it is usually upon the hind-ones that we find it.

Causes. A blow in this region is capable of setting up inflammation.

Concussion is said to be a frequent cause, whilst hereditary predisposition still holds its sway.

Lameness, when the inflammation is progressing.

Treatment. Rest and the application of a bar shoe. Some people fire the part.

Ringworm. A skin-disease, caused by a vegetable parasite, of which there are two species.

The hair falls off, leaving a circular stubbly patch.¹

Treatment. Wash and scrub the part with soft soap and hot water. Now rub in iodine ointment daily, or paint with iodine tincture.

Roaring. This constitutes one of the worst forms of unsoundness, and is a very common disease.

Many handsome horses are perfect but for this defect.

¹ In the other variety a honeycomb appearance is produced.

This is the reason why many high-class horses are doing cab, or other menial work.

Although usually said to be a hereditary disease, it by no means follows that every "roarer" has received such as an inheritance—in fact, this is an indisputable truism.

Hereditary roaring is, so far as we know, incurable, the muscle of the larynx (voice-box) having undergone *fatty degeneration*, through impaired nerve functions.

The muscular tissue is gradually replaced (destroyed) by fatty material. This is, of course, quite useless for the functions assigned to the replaced muscle. Hence a portion of the larynx remains paralytic, and it is this which interferes with the air-supply to the lungs.

Whistling is a modification of roaring.

Tumours in the nostril, larynx, disease of the windpipe, are other causes of roaring.

If the morbid growth can be removed, then the roaring—as such is but a symptom of disease—can be cured.

Many horses work throughout their lives with an air—"inlet" and "outlet" tube fixed in their windpipe—indeed, this is the best palliative for hereditary roaring.

It is the lighter breeds of horses that are the usual sufferers.

Grunting, when a feint is made to strike the horse, points to the animal being "touched in his wind," though by no means must it be regarded as positive evidence without further trial. Put the horse to severe exertion.

Ruptures. The commonest rupture is found at the navel, in colts, foals, and fillies. This constitutes umbilical hernia. As a rule, it disappears as the animal grows older. If not, an operation is called for.

Scrotal rupture is sometimes seen. The bowel passes into the testicular bag, and may hang down between

the legs, if large. The danger rests in the liability towards strangulation of the bowel. An operation is needed.

S

Saddle-galls. These are produced by an ill-fitting saddle, and correspond to "shoulder"- and "girth"-galls, also carbine-bucket galls, shoe-case galls, sword-galls, etc.

Loss of flesh predisposes to saddle-galling. Careless riding, long rides, and removing the saddle whilst the back is hot and wet, are amongst other causes.

If the injury is caused by the saddle, make a careful inspection when the saddle is on the back. The cause must be removed, and the injury allowed time to heal.

Sallenders. *See Eczema.*

Sandcrack. By the use of this term we mean a split in the horn of the wall of the hoof. It is an unsoundness. Some horses go very lame through advanced sandcrack. Unless the split nips the sensitive structures on the front or side of the pedal- (coffin-) bone, it causes no pain.

Sandcracks usually appear upon the "inner quarter" of the fore-limbs, and at the "front" of the hinder ones.

The split may begin on the inner or outer side of the wall, and extend through the thickness of the horn in either direction.

Treatment. The main object aimed at is that of inducing a healthy growth of horn, from above to below.

Clasping the crack prevents further injury. The horse must not be worked if pain is induced.

Seedy-toe. The horn at the toe assumes a mealy appearance. It is soft and devoid of tenacity. It may be that the toe-clip is causing it.

Remove the clip, if this is the case.

Shins, soreness of. Soreness, or inflammation, of the

shins arises through the effects of concussion, and is said to be commonest in race-horses.

A blow is capable of bringing it on.

It is an inflammation of the membrane covering the bone—cannon-bone.

Heat, pain, lameness, and swelling are the chief symptoms.

Treatment. Rest, and cooling lotion to the inflamed part. If an abscess forms, the matter must be allowed to escape. This is done by scarifying the part, but skill is necessary for this purpose, therefore it is advisable to consult a veterinary surgeon.

Shivering. *See Chorea, or St. Vitus' Dance.*

Side-bone. At the back of the coffin-bone two flexible pieces of cartilage are attached. These yield an elastic feel, when the thumb is pressed against the upper and back part of the hoof, provided that they are healthy, but don't respond to this pressure if diseased.

Now, in side-bone we find that they have gradually become hard, and assumed a bony-like character. It is this which constitutes side-bone. Heavy horses are those usually affected, though in these the disease is the least objectionable. The fore-limb or limbs are the usual seats of the disease.

Never buy a light horse with side-bone. In any case, if it be decided to purchase the animal, the price must be reduced.

The chief cause appears to be concussion. During progression, the horse throws his weight upon the front part of the foot.

Treatment. Rest, firing, high-heeled shoe, or operation.

Sitfast. By a "sitfast" we mean an indolent sore upon the back. There is a seat surrounded by a zone of dead

tissue, or a tissue at any rate that impedes the healing process.

Excision of the dead tissue brings good results, but a blister can be applied around the sore. It is necessary to keep the animal off its work, if a cure has to be effected.

Sore-throat. This is a fairly common affection. It is often spoken of as "laryngitis," and may be the result of a simple cold, or part and parcel of influenza.

The horse has a cough—hard and dry at first—difficulty or complete inability to swallow anything beyond a little liquid.

The nose is poked forward so as to relieve the pressure upon the upper part of the windpipe.

As soon as the cough becomes moist and soft, a free discharge from the nostrils takes place. This is a good sign. The discharge must be encouraged by the use of inhalations. The difficulty of breathing may become so great as to threaten suffocation; if so, tracheotomy ought to be performed.

Fever and a hard pulse are other symptoms.

Treatment. Apply turpentine liniment to the throat, beginning beneath the jaw and extending the rubbing down the course of the windpipe-pipe.

Mustard-paste can be used instead, but wash it off in about a quarter of an hour.

Swathe the whole of the head and neck with a flannel-lined hood, etc. Use the following electuary thrice daily, by smearing a piece about the size of a walnut on the inner side of the cheek:—

R.—Powdered chlorate of potash	...	1 ounce.
Extract of hyoscyamus	...	$\frac{1}{2}$ an ounce.
Powdered myrrh	...	1 ounce.
Powdered liquorice	...	1 ounce.
Glycerine	...	2 ounces.
Treacle	...	a sufficiency to make the whole of the consistency of good jam.

Give soft or liquid food only.

Spasms. See Colic.

Spavin. When the enlargement is of a bony nature, it is termed *bone-spavin*; if a distended vein at the part, *blood-spavin*; whilst inappreciable (though suspected) changes between the bones of the hock-joint give rise to the so-called *occult-* (hidden-) *spavin*.

Bog-spavin is a loose term, and can be used in connection with any swelling of the hock.

Both light and heavy horses are equally subject to spavin.

It is spoken of as a hereditary disease, when of a bony nature.

Strictly speaking, there is only one kind of spavin, and that is the bony formation, usually showing itself upon the inner and lower face of the hock, just at the head of the large metatarsal- (cannon of hind-leg-) bone.

The spavin is really the outcome of inflammation attacking the covering of the bone here, and the bone itself. Nature endeavours to repair the injury by cementing the parts together with new bony material. In young horses this is usually completed, but in old worn-out animals the disease exceeds the reparative attempt. The *exciting* cause of bone-spavin is concussion.

How is one to detect a spavin? Compare both hocks by the sense of touch. This is the best guide, though it needs experience.

Large spavins can be seen at a glance.

It may be asked, is a spavined horse of little value? Certainly not, so far as utility is concerned, unless the animal be damaged in other respects.

Cart-horses over five years, with good strong hocks, though spavin be present, are reckoned, by some, as good as an animal without such.

It is during the inflammatory stage—*i.e.* whilst the spavin is being built up—that the animal goes lame. The free flexion of the hock, in horses of quick action, is of course necessarily diminished.

Treatment. Rest during inflammatory process. Cooling applications to the inflamed hock. Dose of physic. Afterwards apply a good blister.

For the bony deposit, pyro-puncture or thermo-cautery is the best.

Blistering or firing, or both, and then turning out to grass, are common practices.

Occult-spavin cannot be detected—unless the X-rays can do it. The rays prove an admirable means of detecting bony deposits upon the horse, and perhaps may be the means of settling many knotty arguments.

Speedy-cutting. A speedy-cutting horse is one that strikes the inner side of the fore-leg (usually about the knee, or below this and the fetlock) with the toe of the shoe of the opposite limb.

Turned-in toes and high action are favourable towards speedy-cutting. It is a dangerous fault, and rightly constitutes unsoundness.

Treatment. Rest; cooling lotion to the sore. Keep the foot narrow on the inner side, and the toe short. A three-quarter shoe can be tried.

A speedy-cutting gaiter may be used.

Various patterns are made for the purpose.

Splint. A splint is a variously-sized deposit (or deposits) of bony material upon the back of the cannon-bone, and almost always affecting the fore-limbs.

Horses of moderate or fast pace are those usually affected. Heavy horses seldom.

Strictly speaking, splint constitutes unsoundness, though many able veterinarians would never dream of reject-

ing a horse for such, provided everything else satisfied them.

The deposit of bone may be rough or smooth upon its surface. A "simple" splint is a single deposit of bone; a "compound," when a number of bony deposits are present.

A splint near to the knee or upon the outside of the leg should always be considered most objectionable, and we think that no veterinarian would dream of advising any client to purchase a horse thus affected.

It is during the formation of the splint (*i.e.* the deposit of bone) that the animal goes lame.

The chief cause is concussion, though a blow in this region is liable to cause the part to inflame, and a splint result.

Splint lameness is characterised by the increase of such during exercise, especially if the horse be trotted on hard ground.

If the splint is in its formative stage, there will be increased heat, tenderness, and pain when the leg is manipulated, at the back of and between the knee- and fetlock-joints.

Treatment. During the inflammatory stage, rest is the first essential. Cooling applications. A high-heeled shoe may be put on.

The daily use of red-blistering ointment will be found of some service.

Veterinary surgeons adopt other special forms of treatment for this malady.

Staggers, grass. This is a peculiar form of disease seen at a particular season of the year, and said to be brought on through eating rye-grass. Remove from pasture, and give a dose of physic.

The complaint is indicated by a staggering gait.

Staggers, stomach. See Indigestion.

Stomach, inflammation of. Vegetable and mineral poisons of various kinds are capable of causing inflammation of the stomach.

According to the nature of the irritant, so must the treatment be.

The symptoms resemble those of inflammation of the bowels.

Strangles. This is chiefly a disease of colthood and fillydom. In its simple and usual form, it is denoted by the formation of an abscess beneath the jaw.

The swelling interferes with the free inlet and outlet of air.

Treatment. Two courses are open to the owner. He may either order the swelling to be fomented or poulticed with hot applications, or he may apply a blister. We think that there need be little hesitation in recommending the latter as being the most convenient.

The abscess, when ripe, can be opened or allowed to burst. Then keep the part open for a few days, dressing with an antiseptic.

Irregular strangles implies that the abscess is removed from its usual situation. Abscesses often form in connection with vital organs.

Stringhalt. This disease is denoted by the sudden catching-up of the limb. It is fairly common in the hind-limbs. Both light and heavy horses suffer from it.

It is an unsoundness. Sometimes the leg is held up for a considerable time, then suddenly dropped. So far as we know, it is incurable.

T

Teeth, diseases of. The molar teeth are more frequently affected than the incisors. The grinding surfaces of the former are commonly the seat of irregularities and

decay. This is particularly the case with old or aged horses.

General symptoms of teeth affections. Loss of condition; quidding of food; or the presence of this latter in the mouth after the animal has finished its provender.

If the mouth is opened—which can be done by grasping the tongue gently with the hand—irregularities will very likely be seen, or if a decayed tooth or teeth be present, it will not only be seen but smelt—an odour not readily forgotten.

A decayed tooth may cause a discharge from the nostril, or a fistulous opening may appear on the side of the jaw.

Treatment. Decayed teeth, or a supernumerary tooth may require removal, for which purpose the services of a veterinarian are indispensable. Any irregularities the layman can rasp off with the tooth-rasp, keeping the mouth open with a balling-iron (gag).

In the so-called “shear-like” mouth, it is the *inner* edge of the lower and the *outer* edge of the upper molars which have their grinding surfaces worn away in a very oblique direction. Rasp down the irregularities.

Polishing of the grinding surface is incurable. Soft food is about the best means of keeping up existence.

Entangled teeth—a condition occasionally found during shedding of the temporary ones—call for the removal of the milk-tooth at the seat of entanglement.

Tendons, sprained. Below the knee- and hock-joints the muscles above end in ribbon-like bands, known as “flexor” and “extensor” tendons, the functions of which are those of flexing (bending) and extending (stretching forward) the limbs. Now, any form of severe exertion necessitates extra strain being put upon the muscles to which these tendons are attached, or rather from which

they come, consequently the belly or fleshy part of the muscle, contracting too powerfully, exercises undue tension upon the delicate fibres of its tendon, provoking in these inflammation, and perhaps rupture of some of the fibres. This commonly happens to the "flexors."

Symptoms. If the injury is recent, there will be increased heat, swelling, resting of the limb, and pain upon manipulation.

After a time, the tendon shortens, and the animal knuckles over.

"Break-down" of the race-horse is due to rupture of the tendon fibres, either of one or both limbs.

Treatment. In the early stage, apply a cooling lotion, such as the following :—

R.—Nitrate of potash	...	...	...	2 ounces.
Sal ammoniac	...	...	...	3 ounces.
Common salt	...	..	...	1 ounce.
Spirit of wine	...	...	...	4 ounces.
Vinegar and water, each	..	...	...	4 ounces.

Mix, and make lotion.

Directions.—Make several folds of linen and soak it in the lotion, fastening it on with a linen bandage, over which a flannel one must be put.

The lotion must be applied four or five times every day.

If this treatment does no good in about forty-eight hours, try the following lotion instead :—

R.—Tincture of arnica	...	...	2 ounces.	
Warm water	...	...	...	1 pint.

This lotion requires the application of "pressure" at the same time, so for that purpose we must make some even rolls of tow, dip them in the liquid, and apply the same evenly on each side of the sprained tendon.

Pad any depressions after the linen bandage is on, so as to get equable pressure upon the sinew. Now apply a hot, dry flannel bandage. This must be done several times daily. It is an excellent plan to rub the tendon with

the thumb and finger for about twenty minutes twice a day.

Supposing that the tendon is permanently thickened—either through sprain or rheumatism—then there is nothing better than firing or blistering, or if a young and useful horse, the owner may get his veterinary surgeon to perform an operation known as “tenotomy”—the object of which is that of allowing the contracted tendon to relax through division of it.

Some horses will work very fairly upon soft ground if the shoes are made with a high toe.

Tendons, contracted. Contraction of the flexor tendons in adult horses is usually the result of chronic inflammation in connection with the tendon, either through sprain or rheumatism.

Foals are not uncommonly born with this defect, but it may come on from birth up to two years. Sometimes the little animal is rendered a complete cripple.

It is probably due to insufficient length of the flexors; or to over-length of the cannon-bone. Thoroughbred foals are frequently affected.

As a rule, the defect is obvious at a glance.

Treatment. Put the foal on its back, and then place the knee against the fetlock-joint, at the same time extend the parts below this by means of the hands, so that the fetlock is brought into an oblique position.

Now put on a bandage of starch or plaster of Paris. The latter bandage must be of cotton, about one and a half inches in width, with the powdered plaster laid over its length (one side only) before rolling it. Having done this, soak the rolled bandage in cold water, and apply, taking care to put on a dry bandage, next to the skin, before doing so. Don't apply the bandage too tightly, otherwise the circulation of the blood in the foot will be impeded.

Common-sense is the best guide with regard to this. If the operation has been successful, the foal will begin to put weight on the limb or limbs. The contracted tendons in adult horses are often removed by the operation of dividing the tendon or tendons (tenotomy), but if both hind- and fore-legs are gone, we would not recommend any one to have it done.

Thorough-pin. By this term we mean a swelling, or distension, at the upper and back part of the hock.

As the swelling can be made to appear at either side of the hock, pushed through as it were, it has in this way come to get its present name, derived from "through-pin."

Young horses with upright hocks are said to be particularly liable, but it is not at all uncommon in adult animals.

It is the capsular ligament of the hock-joint proper (tibia and astragalus) which becomes distended with fluid.

Signs. A swelling at the back and upper part of the hock, capable of being pushed from side to side, and without lameness or inflammation. It is only in exceptional cases that the former is present.

Treatment. Paint the swelling daily with tincture of iodine, though it is doubtful whether it will cure.

Pressure is as good as aught else. Fill the hollow of the hock with pads of tow and put on an elastic bandage. Sometimes a thorough-pin truss is used. Puncturing the swelling has been tried, but is no good without it is repeated several times, at intervals of about six or eight weeks.

The cavity is washed out with iodine after the operation.

Thrush of the foot or feet. This is a very common disease, especially where the stables and feet are allowed to harbour filth. The seat of the affection is within the cleft of the frog, from which an offensive but characteristic discharge issues.

The smell is sufficient to diagnose "thrush of the foot."

Decomposing excreta lodges in or otherwise sets up inflammation in the deeper parts of the cleft, resulting in infection, followed by suppuration, *i.e.* the discharge of pus. Decomposition of the discharge leads to the abominable thrush-like odour.

The hind-feet are necessarily more frequently affected than the fore, but it is common enough in the latter.

As a rule, it is safe to regard it as a disease resulting from neglect.

Treatment. 1. *Preventative.*—Cleanliness.

2. *Medicinal.*—Put the foot into a bath of Jeyes' fluid (one part to forty parts of water), in order to cleanse it thoroughly.

This being done, dress the sore with the powder as follows :—

R.—Calomel	...	...	...	...	...	$\frac{1}{2}$ an ounce.
Powdered iodoform	..	..	..	..	..	$\frac{1}{2}$ an ounce.
Powdered boracic acid	...	...	...	...	...	$\frac{1}{2}$ an ounce.

Mix.

Directions.—Insert some of the powder well into the depths of the cleft, and then put a pledge of tow in, so as to keep the part dry.

Do this twice daily. It will soon cure it. Don't forget that cleanliness is essential to success, so that you must keep the feet cleaner and the stable likewise.

Straw bedding is preferable to anything else while thrush is present.

Thrush of the mouth. Foals, and less frequently, we think, adult horses, are occasionally affected with inflammation of the membrane lining the mouth. In the former it is common when still sucking.

It would appear to be due to deranged digestion, but some authorities think that it is the result of a parasite. For the present purpose, it makes little difference which of these views is the correct one.

Symptoms. The foal will be seen to have some difficulty in sucking, which leads us to examine the mouth. We then find reddened patches on the cheeks and roof of the latter, with, perhaps, small blisters, or collections of grey material, the handling of which gives the hand a nasty smell.

In adult horses, blisters are seen upon the tongue, inside the cheeks, roof of the mouth, etc. These burst and leave a nasty raw-looking surface, the marks varying in size.

Sometimes blister fuses with blister, producing large sores.

Treatment. Borax and honey is suitable for the foal.

Smear a teaspoonful inside the mouth three or four times daily.

Give the mother half-an-ounce of bicarbonate of soda in her food or drinking-water, twice daily, while the foal may have the following powder placed upon its tongue daily :—

R.—Grey powder 40 grains.

Bicarbonate of potash 4 drachms.

Mix, and divide into four powders. Give as directed above.

For adult animals, add two drachms each of chloride of ammonia, carbonate of soda, and hyposulphite of soda, to the animal's drinking-water, night and morning. Wash or gargle the mouth with a solution of common salt and tepid water, twice daily. Continue this treatment until well.

General management. Soft food. Keep clean stable. Fresh water. A little green food if possible ; failing this, a few tablespoonfuls of linseed oil to a bran-mash twice daily.

Toe, bleeding from, in disease. Bleeding from the toe is certainly a very ancient practice ; but whether it has been attended with the benefits accorded to it by some, we are rather sceptical.

Its use has been largely advocated by old writers—and

some present ones as well—for the treatment of inflammation in the feet (founder here).

The horn is pared away at the toe until blood flows out. This is encouraged by soaking the foot in warm water for a few minutes.

Tracheotomy. This is an operation performed upon the windpipe (trachea), for the relief of difficult breathing or threatened suffocation. A small tube is inserted.

Inveterate roarers often wear a tube throughout their lives, carrying on breathing (quietly) through the artificial opening thus produced.

Again, in strangles, sore-throat, or any swelling threatening to bring on suffocation, opening the windpipe becomes a necessity. In this way, the "tide of danger" may ebb away.

Tuberculosis, or consumption. Like man, and many other animals, the horse is liable to suffer from consumption, though we think much less frequently than the ox.

It is a germ disease, being caused by the bacillus tuberculosis (Koch's bacillus). It can be produced in the horse by injecting the cultured germs beneath the skin.

The germs are of very minute size, and contain in their interior little bright spots. These are surmised to be spores. The spleen (melt) appears to participate largely in this disease as it appears in the horse, producing in this situation tubercles or nodules containing the germs, upon the finding of which the diagnosis of the disease must rest.

Progressive emaciation is the most important symptom to the layman.

"Tuberculin" injected beneath the skin by means of a fine syringe is another, but recent, means of diagnosing the disease.

Treatment. This can be but palliative.

If the animal is of no special value, destruction is as economical as any plan we know of.

Tumours. The word "tumour" can be employed to indicate any form of swelling, no matter whether such be hard or soft, situated either internally or externally.

Tumours, be they hard or soft, when situated in connection with, or in juxtaposition to, vital parts, usually cause death, either in virtue of the pressure which they exert, or through the subsequent inflammation which they induce by reason of their rupture and acrid discharge.

Solid tumours, situated externally, *e.g.* capped elbow, are usually amenable to surgical treatment. In most instances, their removal is called for, either by ligature—*i.e.* tying a string around their base—or by the knife.

In the former case there is less bleeding, and it is one which commends itself as being the most suitable for the layman to adopt. The only additional treatment comprises keeping the wound sweet with creolin, or Jeyes' lotion (two drachms to a pint of water), and protecting the part from further injury.

Warts and angle-berries can be removed by the same method.

Polypi—*i.e.* pendulous tumours—within the anus or vagina are readily done away with by the application of a piece of catgut tied tightly around the base of the polypus. The nostrils are occasionally the seat of these morbid growths. Sometimes they are composed of bone, though this is uncommon—in fact, it is incorrect to apply the term "polypus" to a growth of this description.

Malignant tumours are such as have a tendency to return after being excised. Under these circumstances, the excision of the tumour demands giving it a wide berth.

Abscesses must, when ripe, be opened. If preferred, an abscess may be allowed to rupture. It is better to open it

U

Urine, incontinence of. By this we mean inability to retain the urine within the bladder, either through paralysis of the latter, disease of its walls, or irritability of its lining membrane.

Foals commonly are found to be passing urine through their navel opening. This is caused through a tube leading from the bladder not having become closed (which it ought to do, before birth), in this way allowing the escape of the urine.

Treatment. For the incontinence of adult animals, we must try and get to the root of the cause, then treat in accordance with this.

A ball composed of half-a-drachm of powdered nux vomica and 4 drachms of powdered gentian, with 2 drachms of linseed meal and treacle, given twice daily, will be found useful.

In the case of foals, the best plan is to throw the little creature, touch the open vessel with a bit of red-hot wire, and then blister around the navel with a little cantharides ointment. This will usually effect a complete cure in a few days.

Urine, stoppage of. Inability to urinate does not necessarily imply that the secretion of urine by the kidneys has been "suppressed."

Stone within the tubes leading from the kidneys to the bladder, within this latter, or tube leading out from it, may offer mechanical impediments to the outflow of the liquid.

Again, during such diseases as paralysis, colic, strangury, etc., the animal is commonly unable to pass any urine, either through participation of the bladder in the disease, or owing to the horse being unable to place himself in position for urinating.

Treatment. Try and find out the cause.

Suppressed secretion cannot last very long, the animal being liable to die from urine-poisoning (*see Kidneys, inflamed*). Try and pass the catheter ; if a male, a longer instrument is necessary.

The penis is withdrawn from its sheath with the left hand, the catheter cleansed in creolin lotion (2 drachms to a quart of water), and then smeared with belladonna ointment. It is now introduced into the passage and allowed to glide slowly along until it reaches the bend of the pelvis. Here an assistant guides it round with his hand, after which it will be found to go into the bladder without further obstruction. No force must be employed. If there is a stricture in the lower part of the passage (urethra), the passing of the catheter will, likely enough, do away with it, and so allow the flow of urine.

Stoppage of urinary secretion really demands immediate professional advice.

Urine, blood contained in. The expulsion of blood along with, before, or after urination, is a matter of grave importance, in many instances, but, as a rule, less so in the mare, knowing it is not unlikely to have come from the reproductive organs.

It may be passed as bright red fluid blood, in the form of a clot, or in a state of solution. This latter is characteristic of a disease known as "azoturia," in which affection the urine assumes the colour of coffee, minus the milk.

When the blood comes from the kidney, it will likely succeed the act of urination ; but precede it, if from the tube leading the liquid from the bladder.

Causes. Injuries to the loins ; stone in the passage ; disease of the generative organs ; disturbance of digestion, as in "azoturia."

Treatment. When no cause can be ascertained, give the following ball night and morning :—

R.—Acetate of lead	...	...	...	40 grains.
Powdered nux vomica	..	..	..	30 grains.
Extract of gentian	..	..	..	2 drachms.
Linseed meal and treacle	..	..	..	a sufficiency to form a ball.

V

Veins, inflamed. Either of the large veins in the neck are particularly liable to become inflamed, chiefly through the usage of a rusty or dirty fleam during the operation of bleeding. Bleeding several times from the same opening is another cause. Never do this.

Symptoms. The lips of the wound in the vein look thick, red, and angry. There may be swelling around ; sometimes abscesses form.

Treatment. If there are any abscesses, these must be fomented with warm water, and then opened with a clean but sharp pen-knife or lancet.

Having done this, wash all around the wound with warm water, and then apply some fly-blister along the course of the swollen vein. Rub it in for about ten minutes.

Now fasten the head on the pillar-reins for twenty-four hours ; at the end of this time a little vaseline can be smeared on the blistered part. A non-irritant blister can be used.

Give green food or a laxative ball.

Vertigo. See Megrims.

W

Warbles. See Saddle-galls.

Warts, removal of. These are thickenings of the horny covering (epithelium) of the skin. They may be "simple" or "compound." In the latter instance, a number of warty growths spring from one root-stock as it were.

Their removal is best affected by tying a piece of catgut around the base of the growth, allowing it to slough (die) away. There is no danger attached to this method. If very small, try painting them with strong nitre or acetic acid every third day.

When in the neighbourhood of the eyelids, acids must not be used. Lunar caustic can be applied instead.

Another excellent remedy for the removal of warts is a lotion composed of 100 grains of chromic acid, added to an ounce of water, and painted on daily.

Weaving. This is an acquired habit. The animal appears to be constantly shifting its head from side to side (weaving it). It seems to depend upon nervousness, because by carefully observing the horse, unknown to it, it will be seen to have ceased the movement.

Weed. See Lymphangitis.

Whistling. See Roaring.

Wind, broken. This disease is somewhat frequent amongst horses, especially those used for heavy draught, though it may occur irrespective of breed, age, sex, etc.

Although the symptoms are mainly those of a respiratory affection, the disease is intimately associated with perverted or deranged digestive functions.

We believe that broken wind results from changes in connection with the principal nerve governing the stomach and lungs.

Causes. Feeding on dusty hay or fodder; driving immediately after feeding; or through the constant use of bulky food. Never drive a horse just after feeding it, unless you wish it to become broken-winded. Greedy feeders are rather prone to suffer.

Symptoms. There is a hollow, dry, short cough. Once this is heard, it is not easily forgotten. After feeding or drinking, the cough can generally be provoked.

The breathing is characteristic.

"Inspiration" (taking in of air) is shorter than in health; but "expiration" is double (double-lift). In the first part of the act, the air is forced out *quickly*; but very *slowly* during the second part. Wind-sucking, and other minor symptoms of disordered digestion, are commonly present.

Broken wind renders the animal of little value.

Treatment. 1. *Preventative*.—Feed carefully. Don't work immediately after food has been given.

2. *Medicinal*.—Give soft food, and regulate the bowels with occasional small doses of linseed oil.

Half-ounce doses of Fowler's solution of arsenic, given in the drinking-water, daily or twice daily, will help to ward off the unpleasant symptoms.

A vessel containing tar at the bottom, should be always used for the animal to take its drinking-water from.

This latter is very good for the purpose.

Wind-sucking. Like weaving, wind-sucking is an objectionable practice, and constitutes unsoundness.

A wind-sucking horse gathers air in his mouth, swallowing it with a gulping sound. Irregular or insufficient feeding is, we believe, a cause.

Wind-suckers are predisposed to colic and other digestive disorders, likewise to broken wind.

Treatment. Feed regularly.

To the drinking-water add a couple of teaspoonfuls of bicarbonate of potash daily, or twice daily.

Wind, thick. Under the heading of this title, we refer to a condition in which the breathing has become somewhat altered in its character, giving rise to coarse sounds, particularly during severe exertion.

Although coarseness of the breathing may be but of a temporary nature, we think that the term "thick wind" is

mostly limited to a chronic or permanent affection, such as chronic bronchitis, in which the inflammation has produced structural changes in the walls of the air-tubes, either large, medium-sized, or small.

The treatment must be directed towards the disease upon which the abnormal sound depends.

Wind-galls. The so-called "wind-gall" is a puffy swelling, usually appearing at the fetlock-joint.

In reality it is not a wind- (air-) swelling at all, its contents being of a liquid or granular nature.

Either the fore or hind fetlocks may be affected.

The exciting cause seems to be hard work.

Treatment. Irrigation with cold water for a quarter of an hour each day, followed by a good rubbing with iodine ointment.

Firing produces the best results.

Withers, fistulous. It is not at all uncommon to find the horse suffering from fistulous sores upon the withers, and we must confess that once the disease becomes thoroughly established, it is usually extremely difficult to cure.

This shows the importance of taking steps to check the complaint at the very outset.

Some horses are, through defective conformation of their withers, predisposed to suffer.

Commonly, an ill-fitting saddle is the "exciting" cause, but a blow will cause it. It is not necessarily confined to saddle-horses, though they may suffer more often than others.

At the beginning, the disease appears to be a mere bruising and inflammation of the tissues beneath the skin of the withers and lubricating pocket (bursa), on the upper surface of the lower bones of the neck, producing a form of abscess (serous abscess) containing a watery fluid.

It is the bursting (or opening) and subsequent infection of this which leads up to the formation of a running (suppurating) sore or sores.

Treatment. The swelling requires opening, but care is necessary in order to avoid infecting the part. Before cutting it open, wash the lancet in a strong solution of carbolic acid, Jeyes' fluid, creolin, etc. Clip the hair off around the sore, and then wash the skin in this region (over the sore as well) with the same antiseptic solution. After cutting the abscess open—which should be done at the lowest point of the swelling so as to favour the free escape of its contents—wash the cavity out with a solution of corrosive sublimate and compound tincture of iodine, employing a glass-syringe for this purpose. Three grains of corrosive sublimate may be added to every pint of water, along with a drachm of dilute hydrochloric acid and an ounce of tincture of iodine.

If fistulae have already formed, then the services of a qualified practitioner are necessary. Setoning is useless so far as curing the disease is concerned.

The burrowing of matter, and perhaps disease of subjacent bony tissue, necessitates surgical interference.

Womb, inflammation of. This is a very serious complaint, and one in which no time should be lost in seeking the most skilled advice obtainable.

It not unfrequently follows labour, either as the result of direct injury to the womb through surgical interference, or through a decomposing (putrefying) "after-birth" (placenta) being retained too long. This is particularly liable to happen during warm weather.

Never allow the "cleansing" to remain longer than 12 or 24 hours in a mare, otherwise it may cost her her life.

It requires careful separation from the wall of the womb. After removal of the cleansing, the womb ought to be

washed out with a solution of corrosive sublimate, 10 grains to a quart of tepid water.

Internally, a pint of linseed oil may be given, to which a couple of ounces of chloric ether has been added.

General management. Green food, night and morning.

Bran and scalded oats.

Half-an-ounce of chlorate of potash in the animal's drinking-water, twice daily before food.

Strict attention to surrounding cleanliness.

Freely use Jeyes' fluid in solution, or carbolic acid in the same manner.

Clean bedding. Never allow food to lie about after a meal. Clothe the body.

Watch carefully for unfavourable symptoms—denoted by patchy sweating on the body, a rusty, mucilaginous discharge from the vulva, pain in the belly, and blood or dark spots upon the mucous membrane lining the eyelids (conjunctival membrane).

Worms. Three distinct forms of internal parasites are found infesting the horse and ass. These are—

(1) The flat or fluke-like worms (trematodes), uncommon in this animal; found now and again in the bile-passage.

(2) Round-worms (naematodes).

(3) Tape-like worms (cestodes).

Both the latter are very commonly found in the intestines, both large and small.

There is also an "encysted" form of parasite occasionally found in the liver, etc.

ROUND-WORMS

Amongst these there is the so-called "pin"-worms, found within the rectum. The irritation produced by these parasites often causes violent kicking.

To dislodge the parasites, give an injection of turpentine, warm water, and salt. About half-a-teacupful of turpentine and a couple of handfuls of salt, added to three quarts of water, will answer the purpose.

The four-spined strongyle (*strongylus tetracanthus*) is not uncommon, especially amongst colts in the Fen-lands. It is a true blood-sucking worm, causing loss of flesh, pain in the belly, diarrhoea, and gradual wasting of energy. At one period of its life-history, it is coiled up in the wall of the gut, and can be seen shining through when a portion of the latter is exposed to the light.

It is not an uncommon cause of inflammation of the bowels. Other worms may be present along with these. It is bright red in colour, and in this way easily distinguished from the other varieties.

It sometimes causes perforation of the gut-wall.

Treatment. Change from pasture, to a warm and clean stable. Allow pure water. Give the best of food, though in small quantities. A tonic treatment must be carried out. Give half-an-ounce of powdered gentian and two drachms of powdered sulphate of iron, mixed together in the food, night and morning.

Add linseed to the food.

Bran, scalded oats, and carrots (boiled) are as suitable as aught else in this way. Serious losses often occur through these parasites.

If pain and diarrhoea are present, then give half-an-ounce of chlorodyne, night and morning, along with a pint of wheaten gruel.

Burn the excrement and avoid pasturing animals where the colts have been grazing.

A very common—indeed the commonest—large round worm of the horse is **ascaris megalcephala**, chiefly locating itself in the small bowel, though not necessarily so. It

is a spindle-shaped worm with transverse stripes of the same colour (cream). The sexes are distinct.

Treatment. Each evening give one of the following powders :—

R.—Santonin 6 drachms.

Powdered quassia 3 ounces.

Mix and divide into six powders.

Directions.—Give one powder about six o'clock, before feeding, and then three hours afterwards a bran-mash.

The powder must be mixed with a small bran-mash, and four tablespoonfuls of linseed oil can be added as well.

Maw-worms are pretty common in the stomach. They don't seem to do much harm. Again, thread-worms (*filaria*) are now and again found in the eyeball and its coverings. Others are found between the eyelids and eyeball. For the removal of the former, "puncturing" is recommended.

TAPE-WORMS

Several of these are very common in the horse. *Taenia plicata* is often three feet in length, whilst *taenia perfoliata* averages two inches or thereabouts.

The first is found in the small bowel, and the second within the large.

Treatment. Turpentine, given in doses from one to two ounces, along with a pint of linseed oil, is a good enough remedy. A dose of aloes should be given afterwards. It can be repeated in twenty-four hours. Repeat in a few days' time.

Wounds. These are commonly spoken of as solutions of continuity, and in accordance with their nature are usually known as — Incised (clean cut); punctured (stabbed); lacerated (torn); poisoned; gun-shot, etc.

The region of the injury is an important matter.

Wounds in the neighbourhood of the chest and belly are specially liable to be followed by serious consequences.

A large wound is not necessarily a sign of its gravity. Trivial wounds in the region of the feet are often fatal, less frequently those about the mouth. Much depends upon circumstances. Wounds may be either accidentally or artificially inflicted.

When a bone is fractured, in addition to the wound, the gravity of the injury is proportionately increased. The same may be said when an artery is wounded. Depreciation of value usually results from an injury to the knee (wrist in man), usually spoken of as "broken knee."

Treatment. Superficial wounds can be painted with a solution of gutta-percha or else friar's balsam.

Slight injuries to the knee can be treated in the same manner. When the wound is about the eyelids, nose, check, etc., it ought to be carefully stitched up.

A curved needle is the most suitable for this purpose, and it should be threaded with silver-wire or catgut, etc.

The stitches must be taken separately, *i.e.* interrupted. If wire is used, it should be thin, especially if the injury is upon the eyelids. Further, the stitches must not be drawn too tightly together, but a sufficient "grip" must be taken. In this way, a wound can, if neatly sewn up, often be got to heal straight away. Never sew up a wound upon the surface of a joint, *e.g.* knee or hock. The stitches are almost certain to be torn out when the animal flexes or extends the same.

Deep wounds upon the buttocks, etc. require button-sutures, *i.e.* flat pieces of metal (notched), to fix the threads to, so that the tension is exercised upon the button, thereby preventing the suture from being torn out of its place.

Contusions, *i.e.* bruising beneath the skin, demand cooling applications at the outset. A fuller's-earth poultice can be tried.

When there is a broken bone in addition to the wound, the latter ought to be left uncovered with the splint bandage. It should be dressed with iodoform powder and then covered up with gauze, gutta-percha, or tissue, and a bandage over all. Dress the wound daily.

Punctures of the feet demand the immediate removal of the shoe; the foot (sole) pared so that the injury is "bottomed," and, if festered, to allow the free drainage of matter. If this be not done, a "quittor" (fistula of the coronet) commonly results. Having done this, put on a good hot poultice, give a mild dose of physic, and allow the horse a few days' rest. Then shoe with a leather sole.

Many veterinary surgeons now use a substance termed "anti-tetanin." This they inject under the skin. It is regarded as a preventative against lockjaw (tetanus), hence the name. It corresponds to the anti-toxin, now used in the treatment of diphtheria in the human subject.

CHAPTER XXIV

BUYING AND SELLING

THE intending purchaser should make up his mind exactly as to what sort of animal he wishes to buy. Age, sex, service, price, colour, conformation, freedom from vice, and soundness are, in the main, the chief matters for consideration. It must be borne in mind that the purchase of a horse is attended with many difficulties, and requires keen observation in order to avoid imposition. In every instance, we should strongly recommend the service of a qualified veterinarian as being the safest guide, the fee charged for examination as to soundness, etc., being usually from a half to one guinea, with, it may be, travelling expenses in addition.

A prolonged course of special study enables the veterinary surgeon to give the best advice as to the qualities, utility, etc., of the animal presented for his examination. The usual plan adopted is for the would-be purchaser to select the horse he considers answers the purpose for which it is required, and then ask the veterinarian to examine the horse either at the vendor's or at the veterinary establishment. Never allow the seller to select the veterinarian for the examination.

Further, it is much better to allow the veterinary surgeon to call and examine the horse without giving the vendor notification, unless circumstances render it necessary to do otherwise.

And, still further, never have anything to do with a horse if the seller objects to veterinary examination, or will only allow Mr. So-and-So to carry it out.

We don't imply dishonesty on the part of the veterinarian, far from it, but impartiality is the best safeguard for the purchaser.

Never have anything to do with dealers of doubtful reputation.

Again, it must be borne in mind that the horse-dealer's trade is one of giving "low prices" (comparatively speaking) and making the purchaser pay a high price, more especially if the intending buyer's prosperity is known to the dealer. The warm (often hot) stables, forced system of feeding, idleness, and constant grooming, the use of medicinal agents, etc., are the dealer's indulgences, so that a poor-looking horse at the outset is readily transformed into one in the "pink of condition," so far as external appearances go.

The purchaser must never allow himself to be misled in this way, otherwise he may scarcely know his (bargain?) animal after a few weeks' ordinary work and feeding. It is surprising, nevertheless true.

Whenever possible, the breeder is the best man to buy from. One may have to pay a bit more, still the extra cash spent is likely to bring its return.

One way of guarding against disappointment when thinking of purchasing a horse, is that of having the animal on trial for a reasonable length of time. Of course some dealers object to this, but many will allow it, if a little more money be paid, provided the animal turns out suitable.

A horse may be quiet enough in the saddle or harness, yet vicious in the stable. Moreover, it is only in the last-named place that such vices as wind-sucking, crib-

biting, weaving, pointing (often shivering), etc., can be detected.

A couple of weeks on trial, and then a veterinary examination, is not an unreasonable request from a dealer or breeder, and one which—if the horse is all right—there need be no hesitation in asking for.

The purchase at sales, markets, fairs, etc., does of course render trial impossible,¹ and we imagine to ask for such would be merely treated as ridiculous. However, we have not recommended a novice to buy from any of these places, and unless the intending purchaser is confident of his equine skill to pilot him over the multifarious ills and defects—to say nothing of corrupt practices—we are afraid that subsequent events may bring feelings of remorse.

The purchase of a horse at an auction sale is attended with very great risk.

Again, "broken-winded" horses are often sent to market, and we regret to say, now and then sold to the unwary.

Trickery flourishes amongst low-class dealers simply because they know that fools are always to be found somewhere, and these gentry often travel a very long way to find them, and after they have found one, travel still further away—not that we suppose it would make very much difference as to the ultimate results.

The Author trusts that these few lines of advice will serve at least to prevent his readers from falling victims to the shady dealings of any horse-coper.

Remember that a veterinarian of repute will always be found the best pilot—therefore the cheapest.

Lastly, bear in mind that the purchase of a *sound* horse is often a matter of great difficulty, and you may have to wait a very long time ere all your own ideas are fulfilled

¹ Certain Auction Marts now allow three days' trial.

as to age, colour, price, quality, conformation, suitability for service required, soundness, etc.

The terms "practical" and "legal" soundness are slightly different matters.

The first implies suitability for purpose; the second, comparison with a constant standard of excellence.

VICES, ETC.

The following is a list of the most important bad or vicious habits to which the horse is liable, and renders him more or less objectionable :—

1. **Wind-sucking.**
2. **Crib-biting or cribbing.**
3. **Weaving.**
4. **Pawing.**
5. **Kicking.**
6. **Rearing.**
7. **Bucking.**
8. **Runaway.**
9. **Backing.**
10. **Forge-vice.**
11. **Shying.**

As most of these vicious habits are sufficiently explanatory, we deem it unnecessary to enter into consideration of them.

THE LAW OF WARRANTY

When the seller transfers his horse to the buyer, and gives him an assurance that the animal is what he represents him to be, he, the vendor, implies "warranty." Such may be either of a *written* or *verbal* character.

Verbal warranty allows considerable latitude, and the difficulty of proving statements may render the warranty useless, otherwise the verbal would be as good as the written guarantee. If substantial evidence can show that the warranty is untrue, then the vendor is liable for a breach of such.

The mere fact of paying a high price for an animal does not, we believe, bind the seller to take the animal back, or disgorge the profits arising from the sale of such, though some appear to hold this view, which, nevertheless, has been ignored by judges.

Although an auctioneer's catalogue may warrant such and such an animal as being quiet to ride and drive, the buyer must be careful, because this does not imply freedom from certain vicious habits.

No private servant has the right to give a warranty without his master's consent. Such warranties are not binding. Supposing that the servant of a horse-dealer, or his assistant, sells a horse upon warranty of his own—though against the owner's consent—the master is bound.

A warranty includes all known and unknown faults. A breach of this should (and does) enable the purchaser to recover the price paid, together with any damage that he may have suffered through the purchase.

A distinction must be made between "warranty" and "false" representation, because the latter does not—unless there be fraud—afford ground for the buyer to recover.

The purchase of a handsome-looking horse, which proves to be a roarer, broken-winded, unnerved, etc., either for a high or low price, does not—unless warranty, etc., be given—come under the heading of fraud.

If two or more persons engage in selling a horse which they know is unsound, and represent the said animal as “sound,” they, the sellers, are guilty of conspiracy.

The purchase of a horse “with all its faults” does not enable the buyer to return the same, unless it can be clearly shown that trickery has been used to conceal disease. If there has been no attempt to do this, then it would be most unreasonable to anticipate recompense.

Disguising broken wind, broken or blemished knees, navicular disease (lameness disguised by operation), spavin, sandcrack, etc., are commonly practised.

Canker of the foot, or corn (the last by the shoe only), may be disguised by a leather shoe.

A dealer should never warrant a horse as sound—*general warranty*—unless the defect (splint, etc., if such there be) is specifically noted down in the memorandum. Something after this fashion would be suitable under these circumstances—

(Place of residence here.)

*I, John D—, Warrant, this day, the Grey Mare with Star on forehead,
“Sound,” excepting a splint on the off fore-leg.*

Date

(Signed)

HINTS AS TO SOUND AND UNSOUND HORSES

If the intending purchaser desires to dispense with the aid of veterinary services—though we are strongly against the adoption of such a course—he must give particular

attention to certain portions of the horse he is about to examine, in order to disclose evidence of certain well-marked defects. Further, the animal must be seen in the stable both before and after exercise.

In this way, lameness, crib-biting, weaving, wind-sucking, pointing, etc., can often be detected.

Again, never examine the animal with mud upon its feet, and clothing on it. Don't allow the seller's man to trot or ride the horse. An independent party should do so. It is not necessary that this should be one's own coachman or groom—perhaps preferably not.

If the horse has been brought from a distance, have the animal put in the stable for half-an-hour or so before examining it.

After the examination has been concluded, have the shoes removed (fore ones at least), the foot pared at the seat of "corn," *i.e.* at the inner quarter (heel) as a rule.

Whilst the shoes are on, tap them, so as to make sure that the animal is not vicious whilst being shod.

Have the animal quietly brought out of the stable and placed upon level ground. You can now measure its height, take its temperature (normal 100° F.), and run your eyes keenly over its body, in order to note any defects of conformation. Look at the head, shape of the shoulders, height of the withers, position of the fore-limbs in profile, length of the back, loins, croup, set-on of the tail, quarters, and position of the hind-limbs.

Walking from the head on the left side, repeat this on the right (off) one.

Stand in front, and note the conformation of the chest and fore-limbs (*see* Defective Conformation).

Stand behind and look at the back-limbs, particularly at the thighs, hocks, etc.

The Conformation Survey being completed, proceed to that for Soundness.

First look at the age, nostrils, eyes, ears, poll, mane, neck, and withers, passing the hand (right one) over the four last-named.

Poll-evil, skin-disease, evidence of the horse having been bled (indicated by a scar in the upper third of the groove of the neck), fistula of the withers, etc., will be detected in this way.

Now examine for sore shoulders, capped elbow, blemished knee, bruised fetlocks, sore shins, ringbone, sandcrack, seedy-toe, etc.

Next examine the back of the near fore-limb, beginning at the elbow.

Capped elbow, speedy-cutting, splint, contracted or thickened tendons, and (in heavy horses) side-bones may be detected. In order to do this, press the thumb against the upper and extreme back part of the hoof. Pick up the foot, and look carefully for thrush in the cleft of the frog, canker, flat-sole, etc.

Leaving the near (left) fore-limb, examine the back, belly, sheath, and under the groin, the fore-limb being picked up by an assistant whilst carrying out this business.

Examine the front of the hind-leg, particularly the hock, for bone-spavin, swelling, etc., taking care to flex the joint.

Look for bruised fetlocks, ringbone, sandcrack, quittor, etc.

Take a side-view of the limb, looking specially for curb, which appears as a slight prominence a few inches below the point of the hock, the latter being carefully felt for capping of it (capped hock).

The right (off) side is now examined in identically the same way. The hollows of the fetlocks (fore-limbs) ought

to be carefully looked at for the least evidence of a scar, because this is the seat for operating in navicular disease.

The same may be said of the middle and back parts of the fore- or hind-limbs, especially the former, for evidence of the back tendon having been divided.

Lastly, ride the horse, drive it in harness, or else with a good load behind it up-hill. Then listen (by standing sideways against its nostrils) for defective breathing sounds.

Place the horse in a corner, and make a threat to strike it, in order to bring out "grunting"—though all grunterers are not necessarily unsound. Care must be exercised to test the breathing very thoroughly.

Cough the horse for "broken wind."

After having given a light horse a smart gallop on its back, put it into the stable, to allow it to cool down. Have it brought out quietly, and trotted before you. Lameness can usually in this way be rendered evident.

This, then, completes our outline of examination.

CHAPTER XXV

JOBBING

THE custom of obtaining horses on “job” has been in existence for several centuries, and as the advantages offered are considerable, the practice is becoming more popular day by day.

The business of the “job-master” is that of letting horses out on hire by the day, week, month, or year—in some cases for several years.

Whilst the term “job-master” is solely applied to those who retain a stud of horses for hire, the class and quality of these animals is as variable as it is possible to be. Although “job-masters” are to be found in nearly all the principal cities, we believe that we are correct in saying, that the homes of the highest class job-horses are found in London, and there principally in the West End.

Take, for example, the well-known firm of Messrs. East and Co., of Mayfair, whose carriage-horses have obtained an universal reputation. A visit to this establishment will, we opine, satisfy any one as to the correctness of our statement. Here the very cream of carriage-horses can be seen standing either in harness or in their stalls.

The horses belonging to this firm present three noteworthy features, viz.—

- (a) High standard of quality.
- (b) Uniformity of quality.
- (c) Likeness.

Those who have been in the habit of visiting job-masters' establishments, know how rarely the foregoing trio of essentials are to be found. We are aware that plenty of job-masters possess high-class horses, but to find one where the animals are of a "constant standard of excellence" is a problem not easily solved. Whilst the business of the job-master may be spoken of as being of the "first" or "second" class order, it does not necessarily follow that the former always "jobs" horses of the highest class.

We admit that he does so whenever possible, but pressure of circumstances may necessitate the employment of "second" or even "third" grade animals.

Now, in dealing with a large firm the hirer is safeguarded against the risks of this misfortune, the resources at the firm's command *affording absolute protection* against the occurrence of this.

So that, in every case, we strongly advise the intending hirer to make his contract, or contracts, with a firm where he is certain that an animal of equal merit can be obtained should it be needful to replace the hire, either through accident, disease, or other circumstances. The business of Messrs. East and Co., we should explain, is confined solely to carriage-horses supplied only on "job."

Of course dray-horses, hunters, hacks, roadsters, cobs, ponies, and even donkeys are to be had in a like manner from other sources. A question naturally presenting itself to the mind of the reader is, "Whether is it cheaper to purchase a horse out and out, or take one on job?"

In answering this we do so with a certain amount of reservation, because so much will depend upon circumstances. The purchase of a high-class horse is not, as a rule, a very difficult task, but the subsequent risk renders the expense an unknown one, and the inconvenience resulting from sickness, accident, etc., is often a serious matter.

Here the advantages of hiring are at once obvious. Your horse is always ready for you, and, if desired, its forage can be supplied at a fixed sum, whilst in many cases the shoeing, hire of the carriage, etc., can be included in the contract.

Equestrians, or others desiring horses, whose abode is unsettled, find it both cheaper and more convenient to take an animal on "job," the only drawback being, that unsatisfactory horses are frequently supplied in this way. Such need rarely happen if the intending hirer takes the precaution to make his application to a firm having a high-standing reputation.

In the case of carriage-horses we have already made reference to a firm of job-masters whose reputation is second to none. From this firm, on a yearly hiring, a good carriage-horse can be supplied at a charge of fifty guineas per annum, and on application terms for any shorter period, or for any number of horses, may be obtained.

If in or near to London an estimate can be given for the supply of forage.

Whilst the hirer insures himself against loss and adventitious circumstances, he has, if dealing with a reliable firm, the satisfaction of knowing that his "turn-out" will be all that can be desired.

Quite recently a gentleman client, on a visit to the Highlands from London, consulted us regarding the indifferent job-horses supplied to him from a Glasgow firm. One of their horses required surgical, the other medicinal treatment, whilst the third turned out a "jibber." This is only one example of what happens daily, and because the hirer failed to apply to a firm of standing. We must remind the reader that the little extra cost of carriage from London more than amply repays the hirer.

We have no desire to cast a stigma upon the horses

supplied by country job-masters, but we feel bound to state that our experience of the horses supplied by such has been very unsatisfactory.

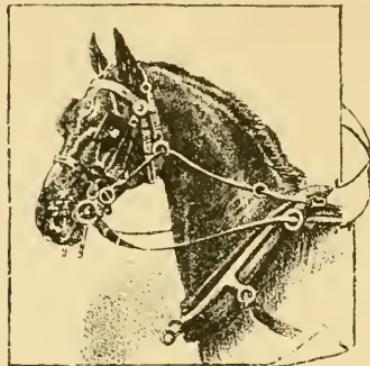
The expression that "the best horses always come from the job-master," could certainly not have found application in the preceding instance ; but in the case of a really good London firm the expression becomes at once the solid truth.

After the carriage-horse leaves the breeder, he has to be educated or trained to his work. This usually occupies a period varying from six to twelve months.

Hunters and carriage-horses require very careful schooling before being fit for hire from first-class job-masters. The latter incurs no small amount of risk, because his purchase may not turn out as he anticipated, and so is cast off, probably at a considerable discount.

Add to this depreciation of stock, either through accident, disease, or death, and it will readily be understood that the job-master, like other men of business, has his evenings of darkness. It is only really first-class firms that can stand through these seasons of adversity, and continue to keep none but the best.

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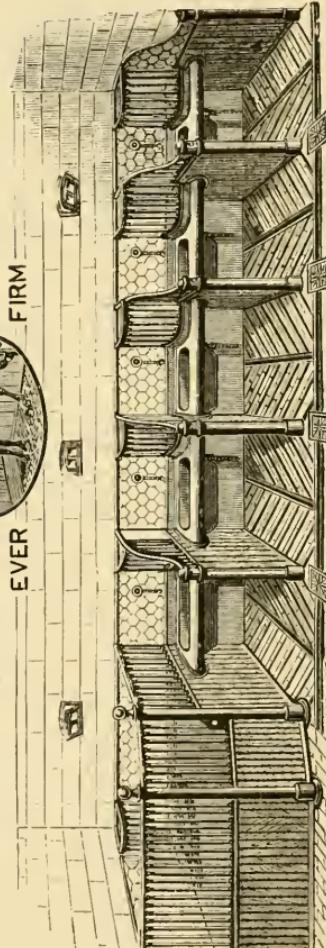
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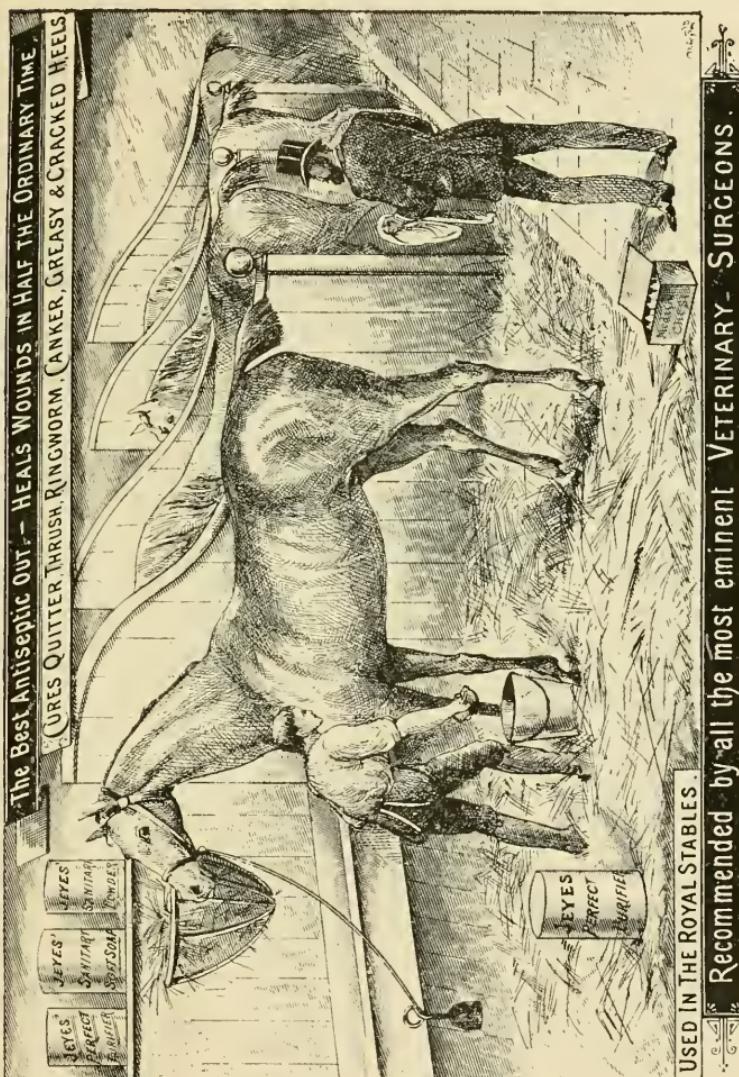
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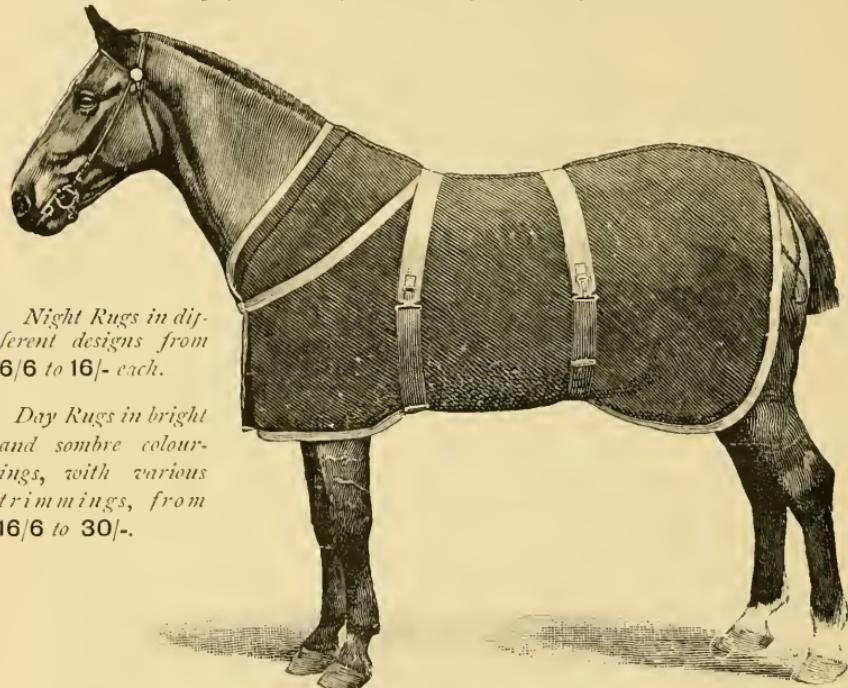
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