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THE ENCYCLOPÆDIA OF THE STABLE

THE ENCYCLOPÆDIA OF THE STABLE

A COMPLETE MANUAL OF THE HORSE, ITS
BREEDS, ANATOMY, PHYSIOLOGY, DISEASES,
BREEDING, BREAKING, TRAINING AND
MANAGEMENT, WITH ARTICLES ON HARNESS,
FARRIERY, CARRIAGES, ETC.

COMPRISING A THOUSAND HINTS TO HORSE OWNERS

BY

VERO SHAW

EDITOR OF *THE HORSE WORLD*, FORMERLY CHIEF HORSE
REPORTER OF *THE FIELD*, AND OFFICIAL REPORTER
TO THE HACKNEY HORSE SOCIETY

COPIOUSLY ILLUSTRATED

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Fig. 258.

Fig. 259.

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INTRODUCTION

IF all, or even one-tenth, of what has recently been written concerning the impending effacement of the horse were correct, the appearance of an addition to the literature of the stable would be uncalled for. The strong opinion may, however, be expressed that the horse is very far from becoming extinct, or even rare, in Great Britain or any other country. On the contrary, to judge by the difficulty that is experienced in discovering high-class specimens of the principal varieties, and the immense sums paid for them when found, it is reasonable to infer that not merely does the present demand for horses considerably exceed the supply, but that numbers of ladies and gentlemen who have not previously interested themselves in horse-flesh, are now taking a direct and practical interest in the equine race,

It is with the object of assisting the uninitiated that *The Encyclopædia of the Stable* has been written, and it is hoped that the suggestions and information contained in its pages, which are the results of many years' close association with the horse and his breeders, at home and abroad, may prove of assistance to those who for the first time are indulging in the pleasure of possessing a stable of their own.

Before concluding, the author is desirous of acknowledging the invaluable assistance he has received from those who have both directly and indirectly aided him in his labours. More especially are his thanks due to Mr F. Babbage, whose drawings and photographs serve so effectually in supplementing the descriptions appearing in the text ; to Mr G. H. Parsons, for permission so generously granted to reproduce illustrations from his unique collection of equine photographs ; to Miss Eleanor Vale, sub-editor of *The Horse World*, for the invaluable assistance she rendered in bringing out the book ; to Professor Cossar Ewart, for permission to reproduce the illustrations of the prehistoric horse, which that great authority upon all

subjects connected with the origin and evolution of the equine race was the first to bring prominently before the notice of the British Public ; and to Messrs George Parker & Sons, for permission to use several blocks from their catalogue.

VERO SHAW.

LONDON, *October* 1909.

ENCYCLOPÆDIA OF THE STABLE

A

Abortion, if it should occur during the early stages of pregnancy, may take place without the fact becoming known if the mare is turned out, and if so is an unimportant event so far as her well-being is concerned, though the disappointment to her owner may be great and she herself may gain an undeserved reputation for being a shy-breeder. During the later stages of pregnancy, abortion is a more serious matter, especially if it occurs about the time the mare is due to foal. Unfortunately, too, the preliminary symptoms are seldom clearly defined, and any uneasiness she may display may easily be attributed to normal causes. It not infrequently happens, moreover, that the unborn foal dies in the womb, and thereby causes considerable danger to the mare. The possibility of this being the case is shown by a bad smelling discharge, the appearance of which necessitates the immediate attendance of a professional man, and especially so if the mare seems to be ill at ease.

Some mares are constitutionally disposed to abort, or, as it is commonly termed, slip their foals, but the most usual causes of the trouble are a sudden fright, eating injurious food such as ergot, a long drink of cold water, overworking, exposure, and the contamination arising from touching or smelling the putrid discharges from other mares which may have recently foaled. (See *Breeding, Brood Mare, Ergot, Foaling.*)

Abscess.—An abscess may be generally described as a

ACCIDENTS

collection of matter—pus—which is either enclosed in a sac or else spreads over the affected part until it escapes through the skin, or finds its progress stopped, in which latter case trouble is certain to result.

Symptoms.—Swelling, associated with heat, and a good deal of tenderness, which gradually subsides as the abscess becomes softer owing to the formation of pus.

Treatment.—In its earlier stages an abscess may be checked by blistering with biniodide of mercury, or by a dressing of oil of turpentine, but when once pus has formed there is nothing to be done but to wait until it ripens, and after it becomes soft, to open it with a lancet, or else to adopt measures such as poultices which shall assist it to burst and discharge its contents. If the abscess can be reached, it may be gently squeezed after being opened, and warm water may be syringed into it twice a day for a couple of days so that it is properly cleansed. Fomentations and poultices may be applied to abscesses, if they are in an accessible position, during their earlier stages in order to reduce the pain of the horse, and to hasten the secretion of pus. (See *Fomentations, Poultices.*)

Accidents, although commonly held to be responsible for many equine evils, are quite as often as not entirely free from any such reproach, as the occurrences for which they are blamed are usually avoidable if ordinary precautions have been taken. Many horses come down every day through bad or careless driving, and scores of others are injured by projecting nails and other obstacles of the kind in the stable which had no business to be there. There are, of course, occurrences which are beyond the control of any groom or coachman, such as a horse receiving injuries whilst out at grass, getting cast in his box, being run into in the streets, or falling on a greasy road. The injuries succeeding such occurrences may be regarded as accidents, and will be found referred to under separate headings. (See *Bleeding, Bruises, Cuts, Sprains.*)

Aconite.—See *Poisons*.

Action.—The manner in which a horse moves his legs is described as action, and his movements must naturally depend upon his conformation. A horse that is required to go fast is necessarily a lighter built and narrower chested animal than one whose work necessitates his moving slowly. His shoulders, too, should be longer and more sloping, and in fact, generally speaking, he should be the more active-looking horse.

There is a great deal of difference, moreover, between high-class harness and saddle action, for the high-stepper is not by any means so easy a ride as the smoother actioned daisy-cutter, who only raises his feet a few inches from the ground, and makes much more use of his shoulders than of his knees.

As a matter of course, the efforts of mankind have materially influenced the natural action of all breeds of horses, the majority of which are the results of the carefully thought-out crosses which have been the care of breeders for generations past. As an instance of this, the cantering and galloping action is not inherited by the hackney, many of which can trot faster than they can gallop, whilst all of the foals of this variety trot in preference to cantering. On the other hand, a youthful thoroughbred, or a half-bred if the offspring of a blood-horse, rarely trots more than a few yards at a time, the reason in each instance being that the formation of the animals adapts itself to one of the above actions and not to the other.

Action undoubtedly can be developed and improved by a proper course of training, but it is obviously the case that better results must attend the scientific schooling of a well-built colt, that is, one which, owing to its conformation, is adapted to the particular action which it is sought to improve, than it will be in the case of a natural galloper which is being schooled to trot, or *vice versa*.

The recognised action of any breed of horse is one of its

greatest characteristics, the liberty and freedom of the horses which are expected to go fast or to create a sensation by the way they bend their knees and hocks being quite different from the cramped, *i.e.*, restrained action of the utility class of animal. Excessive speed or dazzling action are neither necessary nor desirable in horses which are required for work, as in the former case they are liable to cause accidents by moving too fast on the roads, and in the latter the feet and legs are certain to suffer from the effects of concussion. The chief forms of action are the *Amble, Canter, Gallop, Pacing, Run, Trot, Walk*, which see; also *Concussion, Schooling, Stepping*.

Administering Physic.—To give a horse a ball, take a firm hold of the tongue with the left hand, and gently pull it out on the off side, until it rests in the hollow part of the jaw where there are no teeth. Take the ball between the tips of the fingers, which should be held with the points close together, so as to make the hand

How to hold the Ball.

as small as it can be managed, and place the ball as far back as possible by the root of the tongue. Then close the mouth, and watch the near side of the

Administering a Ball.

throat to be sure that the ball goes down, as some horses will refuse to swallow it if they can avoid it. A little water or food may be given to assist matters if there is a difficulty.

A Balling Gun.

Some persons prefer to use an instrument called a balling gun instead of their hands, an illustration of which appears.

To administer a drench, the tongue should not be held, but the head should be raised a little by aid of a twitch or blunt-pointed pole passed through a loop tied round the upper jaw.

In the absence of a drenching-horn, a soda-water bottle or similar vessel may be used, if the edges are smooth. Stand on the off side of the horse, pull the lip away from the side of the gum so as to form a pouch, and administer the drench slowly so as to allow time for its being swallowed. If the horse should commence coughing, the drenching should be temporarily stopped, and his head should be let go.

A common mistake in connection with giving a drench is to raise the horse's head too high, as this prevents him swallowing the dose.

Powders are easy things to administer, as they can be given in either gruel or a mash. (See *Medicines, Prescriptions.*)

Drenching a Horse.

Age.—As probably everybody is aware, the age of a horse can be ascertained by an inspection of the teeth on his lower jaw, from which information can be derived by remembering the following facts. The first set of teeth are known as milk teeth, which are gradually shed and replaced by permanent ones, which alter in appearance as the horse grows older.

AGE

- 1 Adult tooth.
- 2 Milk tooth.
- 3 Six-months-old mouth.
- 4 Two-year-old mouth.
- 5 Four-year-old mouth.
- 6 Six-year-old mouth.

The two middle teeth appear at two weeks old, the next pair at eight weeks, and the two outside ones at eight months. At about two and a half years old the two middle teeth are shed, at about three and a half years the centre two, and at about four and a half the outside ones, the horse thus getting his "full mouth" developed at the age of five years. Of course the process of shedding these teeth is a gradual one, and until they have been shed, the permanent ones cannot appear, still less develop. It must, therefore, be understood that the changes take place about the periods when the horse arrives at the ages stated, as it would be absurd to imagine that as soon as he becomes a two-year-old the centre milk teeth are shed, or that the permanent ones forthwith assume their full size. It may be added that the first set of teeth are perfectly smooth in front, but ridged in their insides and very white, whereas the later ones show grooves on their surface and are of a more yellow colour. It is necessary to allude to this fact in order to distinguish between a two-year-old mouth of milk teeth and a full five-year-old mouth of permanent ones. The shallow grooves alluded to are on the front of the teeth, not on the tops, and can therefore be seen when the mouth is closed if the lips are held apart by the fingers. When he reaches the age of six the black marks in the upper surface of the two middle teeth will begin to fade away through rubbing against the upper ones, the marks on the next pair disappearing at seven years, and those on the outside or corner ones at eight years. At nine the marks on the middle pair on the upper jaw become lost, those on the centre pair following at ten, and on the corner ones at eleven. It may be added that as a horse becomes older his teeth grow longer and develop a tendency to acquire a three-cornered shape. Experience is, of course, necessary to estimate the age of an animal accurately, but the above rules may be relied upon as accurate, though occasionally, but rarely, a strangely abnormal mouth may be found. It must be remembered, too, that unprincipled persons are in the habit of tampering with the teeth of horses

with the object of making their animals appear either older or younger than they actually are.

Some horses, and especially ponies, live to great ages, but probably Old Bill, the property of the late Mr Petrie, of Edinburgh, is entitled to claim the honour of being the Methuselah of the equine race. He was in his fifty-seventh year when the painting from which the accompanying illustration was made, and lived three years longer, when he was shot. The above statement is vouched for by Professor Owen Williams, whose father attended Old Bill, and it may be added that the veteran was in light work until the end. (See *Bishopping, Coper.*)

Air.—Horses not only benefit by, but require, fresh air. Consequently, a supply should always be afforded them in their stables. At the same time draughts should be avoided. (See *Draughts, Ventilation.*)

Airing.—A slang term applied to horses which run in a race but are not intended to do their best.

Airing Clothing.—It is desirable that a horse's clothing should be properly aired from time to time, either in front of a fire or by hanging out in the sun. Of course the above precautions must always be adopted if there is the least suspicion that the clothing is damp.

Aloes.—The best and safest purgative. (See *Medicines.*)

Alteratives.—Medicines which improve the general tone without purging. (See *Medicines, Prescriptions.*)

Amble.—A horse which moves the legs on each side of his body simultaneously is said to amble, the result of the movement being a swinging gait which, though not so attractive as the trot, is rather an assistance to the acquisition of speed. (See *Pacing.*)

OLD BILL, FROM A PAINTING MADE WHEN HE WAS FIFTY-SEVEN YEARS OLD.

[To face page 8.

Ambulance.—Now that the street traffic has become so considerably increased, common humanity demands that a sufficient supply of properly equipped ambulances should be available to remove the numbers of horses which are injured. An ambulance should be padded inside by cocoa-fibre mats, an extra thick one being on the floor, for hay or straw are bad things to stand an injured horse on, as they are apt to get entwined about his legs. The back should be made to let down so as to form an inclined plane by which he can enter the ambulance, which must not be too wide, as a horse with an injured limb will very probably require support.

Anatomy teaches us the position, and the general appearance of all parts of the horse. (See *Conformation*.)

Anæmia, as its name implies, represents a deficiency of blood in a horse, and its presence may usually be detected by a weak pulse, and a very pale mucous membrane of the eyelids. Swellings also appear under the jaw, and the belly sometimes swells, whilst the horse steadily loses strength and flesh, and diarrhœa supervenes.

Treatment.—Check the diarrhœa, administer tonics, and feed well but not unwisely, taking care that the horse is kept warm and comfortable, but not deprived of fresh air and light. (See *Diarrhœa*, *Tonics*.)

Ankles.—See *Fetlock*, *Pastern*.

Anodynes.—Medicines which relieve and soothe pain. (See *Medicines*, *Prescriptions*.)

Anthrax is, fortunately, a disease to which horses are not particularly liable, but it can be communicated from infected cattle or sheep, and can in turn be communicated to man either by direct contact or through the medium of forage.

Symptoms.—Considerable fever, a quickened pulse and breathing, a swollen throat, and profuse sweating, accompanied by staggering when the horse attempts to move. Anthrax is incurable, and when its existence is proved conclusively the horse should at once be slaughtered, thereby anticipating his end by only a few hours, as the disease runs its course very quickly. His body should be buried in quicklime, his stable thoroughly disinfected, and his litter burned. Anthrax is a communicable disease, and therefore notice of an outbreak must be conveyed to the local authorities without delay.

Antimony.—See *Condition, Medicines, Poisons.*

Antipyretics.—Medicines which reduce fevers. (See *Medicines.*)

Antiseptics are applied to wounds with the object of stopping putrefaction; amongst the most efficacious are iodoform, carbolic acid, salicylic acid, boracic acid, and common salt.

Anus.—The opening below the tail leading to the rectum.

Aperients.—Opening medicines. (See *Medicines, Purges.*)

Appetite.—The appetites of different horses vary considerably, those of gross feeders being almost insatiable, whilst the bad doer is the despair of those who are responsible for his condition. Much will also depend upon the state of an animal's health and the amount of work he gets, and therefore in cases of difficulty the circumstance of each case must be considered individually. (See *Feeding, Green Food, and Tonics.*)

Appointments may be generally referred to as the harness and saddlery which a horse wears when at work. Of recent years a good deal more importance has been

attached to such matters at horse shows, thanks in no small extent to the example set by American judges, who show no sympathy to horses which come into the ring in a slovenly condition or improperly harnessed. Hence the existence of so-called "appointment classes," in which so many marks are allotted to the horse, and a certain percentage each to the vehicle, the harness, and the livery of the coachman. (See *Furniture*.)

Arab Horse.—The Arab, unfortunately for himself, has been the victim of much absurd hyperbole which has been lavished upon him by unreasoning friends possessed of no sense of proportion whatsoever. He is, however, undoubtedly a very useful horse in his proper place, and unquestionably the English thoroughbred and other breeds owe their existence to the services of Eastern sires in days gone by.

The Arab breeders have, moreover, set an example to the horse raisers of modern days by the value they attached to their mares; indeed it is generally admitted that all the best horses of the breed are descendants of one or other of five famous mares, respectively named Keheilán, Seglawi, Hamdami, Abeyan, and Hadban, which flourished centuries ago. That the Arab in years gone by was quite a leading variety of the horse world there can be no denying, but he has assisted in producing better breeds than himself, the result being that for racing purposes he is now altogether a negligible quantity, whilst for hunting he is too small and slow; in fact, he is not in much demand, unless for hacking purposes or as a boy's hunter, though he is still often useful as a cross for other breeds. One great recommendation possessed by the Arab is that his bone is of the very best quality, being hard and close in grain, and there is no doubt that although his speed may not be great, his staying powers are first-rate. On the other hand, his shoulders are not so long and sloping as fashion dictates, though, thanks to his good pasterns, he is a very easy ride;

his back is short, with nicely-sprung ribs, and his quarters long. His expression is most attractive, and his head shapely, though not particularly small, whilst the carriage of his tail is most characteristic, as it is carried high, and a little to the side. Few Arabs exceed 15.1 hands in height. (See *Eastern Blood, Thoroughbred.*)

Argentine Horse.—So much improvement has been effected in this horse of late years by the importation of the best Thoroughbred, Hackney, and Shire blood from this country, that the horses of South America are rapidly becoming British breeds. They are hardy, and capable of enduring great fatigue, as our cavalry discovered during the Boer War, but many of them are light and short of quality; owing, too, to the extensive ranges of land over which they are raised, they are not for the most part easy to break, though regarding their future improvement there can be no doubt.

Armorial Bearings.—A license is required for the coat of arms or crest which appears on the panels of a carriage or on the harness of a horse, and carries a tax of two guineas per annum in addition to that levied on the vehicle. A plain monogram, however, incurs no license. (See *License.*)

Army Horse.—See *Artillery Horse, Cavalry Horse, Charger.*

Arnica.—A most useful drug for the treatment of wounds and bruises. (See *Medicines, Prescriptions.*)

Arsenic.—See *Poisons.*

Arteries are the vessels which convey the blood from the heart to the different parts of the body. The colour of arterial blood is lighter and brighter than that of the veins, and it spurts from a wound, whereas the blood from a vein trickles. (See *Bleeding, Tourniquet, Veins.*)

Arthritis.—See *Joint Ill*, *Navel Ill*.

Artillery Horse.—The class of horse required for artillery purposes should be a short-legged, heavy-boned animal, with plenty of substance about him, especially in the case of the wheelers, as the work of stopping the guns falls upon them. In addition to their strength the artillery horses should also be capable of getting over the ground quickly, a cross-bred hackney being as useful an animal for the purposes of the Service as any.

Asiatic Horses and Ponies.—There are several breeds of horses found in Asia, amongst which the Burma and Manipuri ponies rank high. The former average from 13-13.2 hands in height, are very hardy, and can carry a considerable weight for their size, but they are not very fast. The Manipuri breed is chiefly used for Indian polo work, and is a very fast, handy, and smart little animal, smaller than the Burmese type, and better-looking, though the latter make good saddle horses, having very fair shoulders.

The Indian type will be found referred to under a separate heading. The Japanese have a breed of inferior ponies that are rather weedy and weak. Mongolian ponies do most of the work in Japan: they are short, strong, sturdy animals, about 13.1 hands in height; and are used as saddle-horses, have moderately good shoulders, good legs, excellent feet, and are remarkably hardy and sure-footed. They are much used in China for racing purposes.

The Persian polo pony is a useful little animal, averaging from 13.2 to 14.2 hands in height; it has very good bone, and is a very willing worker, once its strong antipathy to the bit has been overcome. The harness horse of Persia is of the Karabagh breed, which has good shoulders, a wide chest, strong hind-quarters: it is well ribbed up, and has plenty of bone below the knee. This horse will do a long day's work on a very small allowance of food, and he is docile and clever, carrying a very intelligent head

In Sumatra is raised the Battak pony, which is about 12.2 hands high as a rule. The head is very well shaped, the neck high-crested, and the colour brown or skewbald. They are high mettled, plucky workers, and are remarkable for their sure-footedness, but they are not successful as geldings.

The Corean ponies are very small, being only about 9 hands high; in appearance they resemble the Iceland pony, and are very hard workers. (See also *Arab* and *Prejevalsky's Horse*.)

Asphalt Paving is the worst form of flooring for stabling of any sort, or for passages, yards, or roads over which horses may have to pass, as whatever may be its recommendations in other respects, it affords no foothold, and is therefore liable to cause serious accidents should the animals slip. (See *Floors*.)

Ass.—Of the ordinary domestic ass there is little that needs to be written, as he is ever with us, and his peculiarities are pretty generally known. At the same time surprise may be expressed that the humble donkey has not been more cultivated in this country than he has been, as his capacity for work, robust constitution, longevity, and general utility render him a very valuable animal for working purposes. Moreover, the ass is unquestionably a member of the great equine family, which includes amongst its members the horse, wild asses in their several varieties, zebras of different types, and quaggas. The ass, however, differs from the horse in several respects besides appearance, such as voice, the absence of castors or chestnuts on his legs, the number of his loin vertebræ, which are five, instead of six as in the case of the horse, whilst last, but by no means least, the period of gestation in an ass is twelve months, that is, one month longer than in the horse. Of course, too, there are differences in the exterior conformation of the two animals, which are so obvious as to need no special reference, but it may be added

that the principal breeds of foreign asses vary considerably in appearance and in height. The best known of these, so far as this country is concerned, is the Poitou ass, which, as his name implies, is of French production, and highly prized by breeders of mules; but Spain and America likewise possess their own varieties, which are favoured by the support of thousands of persons both for riding and draught purposes. The principal value of the ass is as a mule breeder, and it is surprising the amount of size and substance which such a sire as a Poitou Jack introduces into his stock. (See *Mule, Poitou Ass, Quagga, Zebra.*)

Astragalus.—One of the bones of the hock. (See *Bones, Hind-legs, Hocks.*)

Astringents create a contraction of tissue. (See *Medicines.*)

Atavism is the term applied to the tendency which all animals possess to “throw back,” that is, to show a resemblance to some more or less remote ancestor. (See *Saturation, Telegony, Throw Back.*)

Atlas.—The first vertebra of the neck, which unites with the bones at the back of the head so as to allow the head to move up and down. (See *Bones.*)

Auction Sales:—The man who is bold enough to bid a long price at an auction sale for a horse of which he knows nothing beyond what he can see, must be complimented upon the possession of ample confidence in his own judgment. No doubt many bargains are picked up in this way every week of the year, but the fact does not necessarily ensure a person who does not understand horse-flesh being fortunate enough to secure one. Of course, if the intending purchaser happens to be acquainted with the history of a particular animal up to the very day of the sale, he knows what he is

about, and can therefore invest his money with some degree of certainty, though sudden cases of unsoundness often occur, and horses occasionally develop very undesirable peculiarities at extremely short notice ; but the purchaser of a strange horse always runs a considerable risk even if he is a good judge.

Fortunately, however, the services of an honourable and competent member of the veterinary profession can usually be obtained to examine as to the horse's soundness before the sale, as the different lots are usually on view at the Repository for at least a day before they come under the hammer. This opportunity for assuring himself of the soundness of the animal he fancies should never be neglected by the amateur ; indeed, the "vet's guinea" is always well spent when a horse is the subject of a deal, whether public or private. Every possible means should also be taken to ascertain whether the selected horse is a victim of any stable vices, such as crib-biting, wind-sucking, or the like ; and enquiries should be made, if it is impossible to acquire the required information by personal observation, as to whether the animal feeds well, and if his motions are regular and satisfactory. Very often a good deal may be learned from the men attached to the establishment, but though a judicious tip often goes a long way in this direction, there is always a chance of the man having also been retained by the owner of the horse to say a good word for it ; and besides this, too much cannot be expected from the servants of an establishment of the kind.

As regards the descriptions attached to the horses in the sales' catalogues, it may be stated that the proprietors of the leading marts make it a practice of publishing these, and the conditions usually are that if they are supplied by the vendor they are to be regarded as warranties. Thus a horse described as a good hunter is taken to be warranted sound in wind and eye. (See *Buying, Repositories.*)

Australian Horses, or **Walers**, as they are called in India,

generally speaking show more breeding than the average utility horse, and for the very sufficient reason that being chiefly bred for riding purposes, they possess, for the most part, a strong strain of thoroughbred blood. The blood sire is also more commonly met with in the Antipodes than are stallions of any of the other light breeds, which accounts for the prevailing quality of the Walers. Many of the Australian horses are exceptionally good stayers, and as a rule they are lighter in build than the English animals, but their shoulders, legs, feet, and joints are almost invariably good, whilst their constitutions are most robust as a rule. Many first-rate English thoroughbred sires, and notably Musket—the sire of Carbine, imported into this country by the Duke of Portland—have contributed to the excellence of the Australian blood-horse, which has earned a reputation for himself upon the race-courses not only of India, but of this country as well.

Axis is the second bone of the vertebræ, which acts as a pivot for the head to move from side to side. (See *Bones*.)

Axle.—The bar of wood or metal fixed below a vehicle, at the ends of which the wheels revolve.

Axle-box.—The covering of the ends of the axle. (See *Nave*.)

B

Back.—The back of a horse extends from the withers to the loins. It should lie flat between these points, be of a good breadth, and not too long, for a long back is usually a weak one and lacks power about the loins, whereas a short, compact one, provided that the quarters and shoulders are made as they should be, ensures the possession of strength, and is usually associated with properly-developed ribs. (See *Dipped Back*, *Hollow Back*, *Jinked Back*, *Roach Back*.)

Backing.—(a) Every horse should be taught to back. If he is not, his course of schooling is incomplete. Nothing looks worse than to see an animal backing in zigzag fashion, and even if the movement is accomplished in this style, its object may be defeated by the horse or vehicle coming into collision with something behind it. Most horses can easily be schooled to back, the way to proceed being to let the horse stand with the reins fairly tight. Then the reins should be very gently tightened, the movement being accompanied by commands to “back,” delivered in gentle, persuasive tones. The ordinary horse will soon associate the tightening of the reins with the driver’s words, and after a few lessons will be perfect ; but he should not be allowed to forget what he has learned, and hence should be practised at backing, and after he has backed a few steps his head may be loosed and the lesson repeated. In the case of saddle horses, the pressure of the rider’s legs will assist in keeping him straight.

(b) A young horse is said to have been backed when he has been mounted a few times.

Back at the Knees.—A term used to describe a horse who stands with his knees bent more or less backwards, instead of his forelegs being in a straight line. (See *Calf Knees*, *Knees*.)

Back Band is the leather strap which runs through the pad of a single horse’s harness, and buckles over the belly band. Its use is to support the shafts, and for this purpose there are loops called tugs on each side through which the shafts run, the back band being kept from going too far back by the tugs being kept in position by the stops. (See *Harness*, *Stops*, *Tugs*.)

Back Blood is the term applied to the hereditary trait in any particular family of horses which is liable to influ-

ence the constitution, temper, and conformation of the stock of succeeding generations. (See *Atavism*, *Cross-breeding*.)

Back-legs.—See *Hind-legs*.

Back-raking.—The term applied to the act of removing dung from the rectum by hand. (See *Enemas*.)

Back Tendons.—The tendons which join the flexor muscles of the foot above the knee, and pass by way of the pisiform bone down the back of the cannon bone. (See *Bones*, *Flexor Muscles*, *Tendons*.)

Bald Face.—A horse with an entirely white face is referred to as bald-faced. (See also *Blaze*, *Snip*, *Star*.)

Bales.—The wooden strips of timber which are suspended from the roofs of some stables instead of the usual boarding to keep the horses apart. (See *Stables*.)

Ball and Socket Joint is the name given to a joint in which the end of one bone rests in the hollow of another, as in the hip. (See *Joints*.)

Ballng.—A horse is said to ball when he slips owing to a lump of frozen snow accumulating on the soles of his feet. The best means of preventing this is to grease the soles thoroughly before he leaves the stable when the snow is on the ground.

The term is also applied to the act of giving a horse a ball. (See *Administering Physic*.)

Bandages are ordinarily used for two general purposes—firstly, for keeping the limbs warm, and secondly, with the object of keeping the legs fine; of course, too, they afford support to injured ligaments and muscles in cases of injury. For the first of these purposes flannel bandages should be

BANDAGES

used, but for the two latter linen are the best. In all cases

Bandaging the Leg.

the legs should be rubbed before the bandages are applied, in order that proper circulation of the blood is ensured and that the limbs are comfortably warm. It frequently occurs that they are put on too tight, in which case the circulation is impeded, and should the legs swell or the bandages shrink, the skin may be cut by the tapes and the horse marked for life. If applied wet, as in cases of inflammation, they should be kept damp by repeated attention, for when they become dry they are apt to get very hot. Consequently, it is best to use a cool, dry bandage the last thing

at night, reserving the wet ones for day treatment, when the horse can be better attended to ; but it may be added that an outer layer of oiled silk will assist in keeping them moist for several hours. Bandages should never be put on too tight, because of the above-mentioned tendency of the legs to swell a little, and besides this, it must be remembered that every subsequent layer of bandage after the first exercises increased pressure upon those beneath it. They should be kept rolled up with the tapes inside, and when put on, a bandage should lie along the outside of the cannon bone with the end pointing towards the knee. The lower part of the leg above the fetlock should be first dealt with and the bandage wound round it in an upward direction, until the end near the knee is almost reached. This end should then be turned down and the bandage wound round it and tied a few inches below the knee or hock. In cases of emergency a good temporary bandage can be made out of stockings split down lengthways at each side so as to form

a long narrow strip. If one stocking is not long enough it can be fastened to another by means of safety pins. (See *Boots*.)

Bang-tail.—A tail of which the hair is squared off close to the dock or solid part of the tail. Those connected with heavy horses refer to banging up the tail in the sense of tying it up. (See *Dock*.)

Barb Horse.—In many respects the Barb resembles the Arab, but he does not possess the latter's quality and is plainer about the head. His bone, however, is of first-rate texture, and as a saddle-hack his merits stand high, but he, like the Arab, is not tall enough to suit adult riders, who are particular regarding appearances. (See *Eastern Blood*.)

Bardot.—A French expression denoting the offspring of a pony or horse sire and a she ass. (See *Hinny*, *Jennet*.)

Barley is not a common food for horses in England neither can its adoption be recommended, as, apart from its high price, its use is often associated with intestinal troubles and indigestion. (See *Feeding*.)

Barouche is a four-wheeled carriage with a boat- or canoe-

Canoe Barouche.

shaped body, fitted with a leather head behind. It is made

to seat four persons inside and two on the coach-box. It is hung on Elliptic or C. springs, and on the latter suspension is one of the highest grade of park carriage when drawn with two good horses.

Barrel.—The body of a horse, extending from behind the forearms to the loins.

Barrenness in the mare may very possibly be overcome by a comparatively simple operation which, however, ought always to be entrusted to a professional man, from whom advice should be obtained before a mare that fails to breed is rejected as barren. It is true, moreover, that in some cases a mare which proves barren to one horse will readily throw foals to another, and the same remark applies to stallions. (See *Breeding, Brood Mare, Stallion, Sterility.*)

Bar-shoe is a shoe with a band of iron connecting the heels of the horse's hoof. (See *Corns, Sand Cracks, Shoeing.*)

Bars.—(a) Of the hoof, are the raised parts of the wall which run parallel to the sides of the frog. (See *Foot, Hoofs.*)

(b) Of the mouth, are the gaps in the lower gums, between the front and back teeth, on which the bit rests. (See *Mouth, Tush.*)

(c) Of a bit. The rings in the leg of the bit to which the reins are attached. (See *Bits.*)

Baulking.—See *Jibbing.*

Beaning a Horse.—An old trick of horse copers who, when an animal is lame on one front foot, place a small piece of metal or sharp stone between the shoe and the wall of the sound hoof in order to cause temporary pain, so that the horse, being tender in both feet, will appear to go sound.

Beans, if sound, thin-skinned, not less than one year old, and weighing from 60 lbs. to 64 lbs. per bushel, are a

most excellent food for horses in hard work, but they must be given judiciously, and in addition to other food. Roughly speaking, the allowance of beans per feed should be from one-eighth to one-twelfth of the weight of the grain supplied. If supplied to horses doing easy work, excepting as an occasional pick-me-up, beans will be found too stimulating and heating; hence they may cause legs to fill, and other troubles. It may be added that beans are often the subject of attacks from insects which perforate the skins and render them unfit for horses to eat. (See *Feeding*.)

Bearing-rein.—The use of the bearing-rein is widely condemned by many people who do not recognise the undeniable fact that there are some horses which it would be difficult, if not unsafe, to drive without some such assistance as it supplies being afforded the coachman. At the same time there are thousands of cases in which it is not necessary, and even in those where it is, the bearing-rein should never be too tight, and if the horses wearing it are standing for any time it should be unhooked from the pad. It consists of a rein fastened to the cheeks of the bit which pass through the ear-rings of the headstall to a hook in the pad, and its object is, or should be, to assist the driver in controlling the puller or horse that is liable to stumble. As, however, it causes its wearer to carry his head better, it is often utilised for the purpose of improving his appearance.—(See *Bridoon, Harness*.)

Bedding.—Straw, peat moss, sawdust, sand, and brackens are all utilised for bedding horses in various parts of the country. Of these, straw is incomparably the best. It possesses one disadvantage, however, as it is often eaten, and if so it is liable to disagree with the horses; besides this, there is the matter of cost to be thought of where economy has to be considered. Still, straw looks, and is, the best of all beds for a horse. Wheat straw is to be preferred for stable purposes, as it lasts longer and is the

most elastic. Oat straw is too soft and brittle, whilst barley straw, though tougher, is also rougher, and the most liable of all to cause inflammation when eaten. Under ordinary circumstances an allowance of about 10 lbs. of straw a day is a fair average, the correct method to pursue being to remove all the soiled bedding each morning, and to leave a thin layer of straw for the horse to stand on during the day; the remainder of the night bedding and the allowance of fresh litter being forked up under the manger until the animals are bedded down in the evening.

When peat moss is used for bedding, see that the stable drains should be carefully stopped up to prevent their becoming choked. Peat moss undoubtedly forms a good bed, and as it absorbs moisture readily, the soiled portions are easily removed without incurring any unnecessary waste. Thus moss is a cheap bedding, and is used in every horse-breeder's stable, but its quality varies, and hence the necessity of only dealing with a reliable firm, such as the Litter Supply Company of Mark Lane, E.C.

Sawdust spread to the depth of a few inches on the floor forms a very good bedding, and if covered over with a thin layer of straw, does not look at all bad in the day-time, but care must be taken to stop the drains.

Sand, especially sea-sand, cannot be recommended as a bedding, even if it is covered by straw, as it is apt to get into the coats, eyes, and nostrils of the horses, and many of them will eat it if it contains any salt. With this also the drains must be stopped.

Bracken is a capital bedding if a sufficient supply can be obtained, and the owner does not attach importance to a smart appearance. Only dry bracken should be used as litter, and if easily obtainable can be recommended for cart-horse stables, and the boxes used by young stock.

Hay which is unfit for food is sometimes used for bedding, but under any circumstances it is not to be recommended for the purpose, as, not being elastic in its nature, it flattens down and becomes hard for the horses to lie upon.

It is essential that all bedding should be well turned over every day, and the damp portions dried by exposure to the air if they are not too much soiled for further use. The discarded litter should be replaced by an equal amount of clean, which ought to be thoroughly mixed with it, so as to ensure the horse getting a good bed to lie upon.

Belly-band.—The strap which keeps the pad of the harness in its place and buckles under the belly. (See *Harness, Pad.*)

Big Head or Osteoporosis is a swelling of the bones of the nose which considerably increases the size of the lower part of the head. The bones become porous and brittle, and general weakness supervenes, often accompanied by lameness. Bad pasture is believed to be a chief cause of the disease, which usually terminates fatally.

Treatment.—Place the horse in a loose box by himself and give him a mild dose of opening physic, such as linseed oil. Keep him on mashes and green food, into which one dram of sulphate of iron is mixed duly. Also be careful to supply him with salt to lick.

Bishopping is a fraudulent operation performed by copers upon the teeth of horses in order to make the animals appear of a different age to that they actually are. (See *Coper.*)

Bites.—See *Viciousness.*

Bitting.—A horse that is given to the use of his teeth upon other animals or his clothing is always a source of vexation, if not of positive danger, to his owner. Of course, a muzzle supplies an obvious check to the vice, but it is impossible that this can always be in use. The best thing to do is to stand the biter in an end stall, and

to fix his collar rope to the side wall so that he cannot reach his neighbour. Many horses destroy their clothing because they are suffering from some skin trouble which is irritated by contact with the rug, and therefore if the offence is suddenly developed, the cause may be discovered by examining the offender's body. In confirmed cases a coarse canvas outer sheet with rough edges may be worn outside the ordinary stable clothing, but nothing is so effective as the muzzle.

Muzzle for Biters.

Bits.—The subject of bits is one that is either entirely misunderstood or else grossly neglected in many stables, as it is an undoubted fact that horses' mouths differ so greatly that an animal which will go perfectly in one sort of bit may become absolutely unmanageable and useless in another. There is a great disposition, too, on the part of both owners and their servants, to over-bit a puller, the impression apparently being that a hard mouth is only susceptible to the influence of a very severe bit; but this is by no means invariably the case. Were people only to realise the effect produced by a bit they would more readily understand, and sympathise with, the behaviour of a horse which resents the pressure brought to bear upon his lips, tongue, and the bars and roof of his mouth by some of the instruments of torture which are used by unreflective persons.

A bit is composed of a mouthpiece which may be straight or else consist of three parts—namely, the port, which is an arch of greater or less depth, is so situated in the centre of the mouthpiece that it presses upon the palate when the reins are pulled. The cannons of the bit are those parts which extend from the port to the lips or sides of the mouth, and the heels are the ends of the cannons on the inside, where they join the port. The branches of the bit extend from the top eye, attached to the head-collar or

BITTING

bridle, to the ring or lower bar at the bottom, the upper part from the mouth to the top eye being called the cheek, and the lower one, from the mouth to the bottom bar, the leg. When the rein passes through the ring at the corners of the mouth the horse is said to be driven "on the cheek," when on the centre ring "in the middle bar," and when on the lowest ring "on the bottom bar." (See *Bars, Biting, Driving, Mouth, Riding.*)

Plain Snaffle.

Chain Snaffle.

Twisted Snaffle.

Hunting Bit.

Weymouth Bit,
with bridoon.

Guard Bit.

Liverpool Bit.

Elbow Bit, with movable
mouthpiece.

Pelham Bit.

Bitting.—It would be quite possible, and indeed justifiable, did space permit of it, to write a long homily upon

the enormities committed by unthinking people who do not understand the proper way to bit a horse. It will, however, be sufficient to observe that the mouth of every animal differs, and hence it is the duty of those who are responsible for the safety of those who use a horse and for the well-being of the animal to discover the sort of bit that suits him best. Many a confirmed hard puller or bolter, which appears indifferent to a very severe bit, has been discovered to be quite an amiable, pleasant animal to work in a plain snaffle; in fact, there is a key to almost every horse's mouth, which it is the business of those who have charge of him to discover. More mouths have been ruined by severe bits, especially in the case of young horses which are being broken, than people imagine, and it should be remembered that when a mouth is once spoiled it requires much time and trouble to remedy matters, even if the mischief can ever be undone. (See *Bits, Bolting, Driving, Hands, Mouth, Riding.*)

Blanket.—See *Clothing*.

Blaze.—A broad white streak running down the faces of some horses. (See also *Bald Face, Snip, Star.*)

Bleeding.—It is occasionally considered desirable to bleed a horse, in which case the operation should be left to the skill of a professional operator. In cases of bleeding or hemorrhage the result of accident, the trouble in slight cases can usually be stopped by the application of either very cold or very hot water. If the flow from a wound is not checked by this means, or if it is a severe one, an impromptu tourniquet may be applied by the aid of a pocket-handkerchief. In cases of emergency, where a tourniquet cannot be used, a dab of wet linen, or lint, if available, should be placed on the wound, and a smooth stone above this dressing in such a position that when a bandage is applied extra pressure will fall upon the wound. In using a tourniquet, care should be taken to ascertain whether it is an artery or a vein which

is lacerated, as the blood should be stopped above the wound in the former case, and below it in the latter. If the bleeding is from the nostrils or mouth, ice or cold water should be applied to the head. It may be added that hemorrhage from a vein trickles from the wound, whereas if it comes from an artery it spurts out; the blood from an artery is also lighter in colour than that coming from a vein. (See *Burst Blood Vessels, Tourniquet.*)

Blindness.—Many blind horses are excellent workers in harness, provided they are carefully driven; and hence it is unnecessary to part with an old favourite should this misfortune overtake him. (See *Cataract, Eyes, Ophthalmia.*)

Blinkers.—The leather shields fixed to the bridle or head collar behind the eyes of horses to prevent their seeing, excepting in front of them. (See *Harness.*)

Blistering.—The use of blisters is recognised by all veterinarians, and so long as unnecessary severity is not associated with their use, they are undoubtedly of much service in many cases. Before applying a blister, the hair, if it is long, should be cut short, and the place must always be washed clean with soap and water. If the part affected be fomented beforehand, the action of the blister will be more severe. Should the parts which have been treated burst after they have commenced to dry, the application of a little linseed oil or vaseline will allay the irritation. The horse's head must be kept racked up short, or a cradle fixed on his neck to prevent him gnawing the sore when it itches.

The principal substances which are used for blisters are turpentine, mustard, mercurial red ointment and cantharides. (See *Cradle, Prescriptions.*)

Blood.—The amount of blood a horse contains in his body is about one-eighteenth of his weight, distributed, roughly speaking, as follows:—heart and larger blood vessels,

one quarter; liver and intestines, one quarter; muscles, one quarter; other parts, one quarter. It is carried by the arteries from the heart all over the body, and returns through the veins, the heart acting as a pump, and should it happen to coagulate and form a clot instead of passing freely through the vessels, serious troubles may arise. (See *Arteries, Bleeding, Heart, Veins.*)

Blood Horse.—A Thoroughbred.

Blood-poisoning is frequently the result of some disease which attacks a horse, but it may be caused by foul wounds.

Symptoms.—Increased temperature; shiverings, a fast but weak pulse, and quick breathing. The horse, though clearly weak, becomes restless, the tongue is furred, and if the eyelids are pulled down, the inner membrane is of an unhealthy-looking yellowish colour. The horse will not look at his food, and sometimes swellings appear on his body.

Treatment.—Keep up the strength by stimulants, such as eggs beaten up in brandy and milk four times a day; but the disease is a serious one, and the medical treatment should be left to a qualified practitioner, whose services should be obtained without delay.

Blood-spavin is the term applied to the swelling which is sometimes found in the vein under a bog-spavin, owing to the size of the latter interfering with the flow of blood. Such things are not serious, and usually disappear as the bog-spavin yields to treatment. (See *Bog-spavin, Spavin.*)

Blood Vessels.—See *Arteries, Burst Blood Vessels, Veins.*

Blowing.—Even high blowing need not be regarded as a sign of unsoundness, or associated with roaring or any affection of the wind. It is often caused by a movement of the false nostril, which creates a suspicious noise, but even in chronic cases it is not necessarily a sign of unsoundness. (See *Breathing, False Nostrils.*)

Blowing over Food.—It is never a good thing to give a bad doer or sick horse more food than he is likely to eat, or, for that matter, a healthy animal either. If there is corn or hay left over, especially if the horse is off his feed, his breath will not make it sweet or palatable-looking after it has stood before him for some time, and he will probably decline to eat it altogether.

Bluff.—The bandage, with leathern sockets for the eyes, which is put over the foreheads of bad-tempered or excitable stallions to keep them quiet.

A Bluff.

Body Brush.—An oval-shaped, short-haired brush, with a strip of webbing secured to the back for the hand of the groom to pass through. The body brush is the principal article of stable equipment that is used in grooming a horse. (See *Curry-comb, Grooming.*)

Body-sheet.—See *Clothing.*

Bog-spavin is a soft swelling on the inner front side of the hock, and is usually a result of concussion. If there is no inflammation, lameness is rarely present; but should there be, the part must be fomented, and subsequently be dressed twice a day with tincture of iodine. Rest, cooling medicine, and food will usually assist in effecting an improvement.

Bog-spavin.

Bolting.—A horse that has once bolted, in nine cases out of ten, remains for the rest of his existence a source of danger to those who use him, as having learned his power,

he is always likely to repeat the offence. Hence a runaway is usually an animal to be disposed of without a character. When placed in the unenviable position of having to stop a bolter, the object of the person in charge should be to get his head turned round as close to his side as possible, which is not an easy thing to do by any means, especially if the horse has got the bit between his teeth. The best way of succeeding is to get hold of the off rein as low down as possible with the right hand and pull at it, meanwhile holding the near rein fairly tight in the left hand. Sawing at the mouth is recommended by some people and may be useful in a few cases, but the former method is the better. If the position should become serious, that is to say, if a smash up appears imminent, efforts may be made to throw the horse, by alternately pulling at his head hard, and suddenly letting it loose, which may cause him to cross his legs and fall ; but as a rule it is always best and safest for a rider, and still more so a driver, to keep his seat, as jumping off is usually the cause of more serious injury than a collision. If the road is clear, moreover, there is always a chance of pulling up the horse, especially if he knows the voice of his driver, and the latter calls quietly to him to stop ; and it may be added that if the runaway can be turned on to a steep hill the chances of his slowing down are materially increased. (See *Bits, Pulling.*)

Bolting food is usually the result of decayed teeth, and is a fruitful source of indigestion, which leads to other troubles. After seeing to the state of the teeth, feed on bruised oats and chaff. (See *Dentistry, Indigestion.*)

Bolts.—All the bolts and fastenings of doors, especially those inside a stable, should be so fixed that they do not project beyond the woodwork, as if they do, they are extremely liable to injure a horse which comes up against them, and may leave a blemish on him for life.

Bone.—The possession of good bone below the knee always adds to the value of a horse. In this connection the expression “good” may be taken as referring both to the quantity and quality of the bone. An insufficiency of bone may be regarded as a sign of weakness, but a very great deal depends upon the texture, a soft, spongy bone being much less adapted for fast and hard work, than one which shows a close grain. The latter is far better adapted to withstand the effects of concussion than the former, hence, speaking generally, the quality of the bone of light horses is usually superior to that found amongst the heavier breeds, though the latter possess much the bigger limbs. No doubt the amount and quality of bone in individual horses is influenced a good deal by the soil upon which they are bred and raised, it being generally accepted that horses reared in a limestone country possess a superior and more ivory-like quality of bone, whilst that of animals reared on heavy, marshy land is, comparatively speaking, though more largely developed, of a more spongy character. The natural quality of the bone of the Arab horse and the thoroughbred is regarded as the best so far as the lighter breeds are concerned, whilst amongst the heavy varieties the Suffolks occupy a deservedly high position, the density and closeness of bone in these breeds being exceptional. (See *Cannon Bones, Climate, Fore-legs, Soil.*)

Bone Spavin.—See *Spavin*.

Bones.—The illustration on the next page shows all the principal bones of a horse.

Bonnet.—A term applied to a person who expatiates upon the merits of a horse with the view of assisting his owner to sell him. Most copers employ the services of a bonnet, who is also often called a chaunter.

BONES

- 1 Upper jaw.
- 2 Lower jaw.
- 3 Atlas.
- 4 Axis.
- 5 } Cervical vertebræ.
- 6 }
- 7 } Dorsal vertebræ.
- 8 }
- 9 } Lumbar vertebræ.
- 10 }
- 11 } Sacrum.
- 12 }
- 13 } Caudal vertebræ.
- 14 }
- 15 Pelvis.

- 16 Femur or thigh.
- 17 Fibula.
- 18 Tibia.
- 19 Os calcis or point of hock.
- 20 Astragalus.
- 21 Scapula.
- 22 Shoulder joint.
- 23 Humerus.
- 24 Ulna.
- 25 Radius.
- 26 Pisiform.
- 27 Carpus or knee.
- 28 Splint bone or inner small metacarpal in front, or metatarsal in back legs.

- 29 Cannon bone or large metacarpal in front, or large metatarsal in back legs.
- 30 Sesamoid.
- 31 Long pastern.
- 32 Short pastern.
- 33 Coffin.
- 34 Navicular bone (position of).
- 35 Sternum or breast-bone.
- 36 True ribs (8).
- 37 False ribs (10).
- 38 Patella.
- 39 Stifle joint.

Boots—(a) *of a coach*.—These are two in number—namely, the front boot, which is the space under the coachman's seat always used for the storage of spare traces, spanners, and other articles which are useful in case of accidents; and the hind boot, the door of which is at the back, and in this passengers' property or the luncheon-basket can be carried.

(b) *Boots for horses* are usually of leather, and are fixed above the fetlocks or on the cannon bones to protect the parts which may have been bruised by brushing, speedy cutting, or other injuries. In the case of sprained tendons, a laced boot or a tight-fitting bandage which can be sewn on will be found very useful as a support; and an india-rubber ring above the fetlock will often supply a good protection in cases of brushing. (See *Yorkshire Boot*.)

Fetlock Boot.

Ring Boot
(to prevent brushing).

Bots are the larvæ of the *Gastrophilus equi*, a fly which deposits its eggs on the coats of horses. Animals out at grass are the chief victims of this fly, which rarely, if ever, enters a stable, whilst it seldom interferes with a horse at grass unless the sun is hot. If the larvæ enter the stomach, as they are liable to do when the horse licks himself, they will probably cause serious internal troubles, and even, in bad cases, the death of the animal.

Box.—A box should be not less than 10 feet square so as to accommodate the animal confined in it comfortably. It should likewise possess a door sufficiently wide to allow its occupant to go in and out easily, and there should be no

projecting bolts or latches about it. The door should be provided with two fastenings, one about 2 feet and the other about 5 feet from the ground. A box, too, should be light, well ventilated, and, if straw is used as a bedding, properly drained. (See *Drains, Stables, Ventilation.*)

Brain.—It would be impossible within the limits of space available for the purpose to enter into an exhaustive description of the horse's brain, but an allusion may be made to its functions and formation. Briefly, it may be mentioned that the two main parts—namely, the cerebrum, which is the organ of thought, and the cerebellum, which directs the muscular movements—are connected with the spinal cord by a third, called the *medulla oblongata*, which is a most important organ inasmuch as it controls the breathing and, consequently, the life of the animal. The cerebellum is situated at the top of the head, and the cerebrum below it, behind the forehead, and hence a blow behind the ears is liable to affect the power of the horse to move. The weight of the brain is about $1\frac{1}{2}$ lbs., the cerebrum being seven times heavier than the cerebellum; and it may be added that the size of a horse's brain in comparison to that of the body compares unfavourably with those of the dog, cat, ass, and pig, though it is superior to that of horned stock. (See *Instinct, Intelligence, Memory.*)

Brake.—A four-wheeled open vehicle, constructed to carry a considerable number of people sitting face to face. In addition to the box-seat some brakes carry a second row of passengers behind the driver. (See *Carriages, Char-a-Banc.*)

Bran, although not very nutritious, is largely used as an addition to the grain and chaff allowance of horses in order to prevent the animals from bolting their food. If given in the form of a mash it is a gentle laxative, and may be substituted for the last feed the night before a horse gets

a rest, and also if the animal is unwell or in an exhausted state, when it may refuse grain. The way to make a bran mash is to place from 2 to 4 lbs. of bran in a bucket that has been heated, and flavour with a little salt, then add boiling water according to the amount of bran used, sufficient to thoroughly damp it. Stir thoroughly until it is well mixed up, cover it over with a thick cloth, and it will be ready for use in twenty minutes. (See *Gruel, Restoratives.*)

Branding.—Branding with hot irons is the most common means of distinguishing the horses belonging to different owners who turn their breeding stock on to common land. The practice, however, is open to objection, as the marks are frequently great disfigurements when the animal's coat has been the subject of care to his groom in after life, and consequently the branding irons had better be applied to the sides where the saddle will hide them in the case of riding horses. It is a difficult matter, too, to distinguish brands at a distance when horses have on their long winter coats, and therefore some breeders adopt other methods of identification. Branding numbers on the feet is a practice adopted by the Government and many owners of large studs in order to identify their horses. (See *Ear Marks, Tail Notches.*)

Break.—A horse's action is said to break when he changes from a trot into a canter, or a walk into a trot, at the will of the person in charge of him or otherwise. (See *Off his Feet.*)

Breaking.—It is a sad but most unquestionable fact that many hundreds of valuable colts are utterly ruined every year by the incompetence or the bad tempers of those to whom the responsibility of breaking them is entrusted. Perhaps a third cause may be said to be the undue haste which characterises the work of the professional horse-breaker, who may happen to have a number of pupils on his hands at

the same time, and so has not the leisure, even if he possessed the inclination, to do full justice to each of them. A common mistake made far too often is for the breaker

Breaking Bit (plain).

to ignore the fact that every horse is influenced by its own peculiarities, which ought to be studied if a complete success is to be achieved ; and hence the first piece of advice to be given is, study the temper and disposition of the colt, and

act accordingly, always remembering that though firmness is necessary, ill-treatment and over-biting are sure to spoil the animal.

All foals should be accustomed to be handled from a very early age in order that they acquire confidence, and it is, more-

Breaking Bit (with keys).

over, most desirable that they should be thoroughly used to the feel of a head collar ; hence it is necessary that they should wear these for two or three days a week ; and if they are taught to lead, a good deal of trouble is likely

to be saved the breaker. On no account should the colt be thrashed or bullied if he hangs back, or is in any way awkward when first led : persuasion is far better ; but he must not be let off if he refuses to move, else he will get the idea into his head that he, and not the breaker, is master.

In order to accustom him to the feel of the head collar, the latter, with a piece of cord about 8 or 10 feet long attached to it for leading purposes, may be left on the colt when his lesson is over, the cord being tied up in a secure coil and left hanging down. After he leads well, a cavesson, with a long line made of webbing attached to the ring in front of the nose-band, may be substituted for the head collar, and lungeing lessons should begin. The pupil should

BREAKING

not be given the whole length of the webbing at first, or until he has quieted down and shown signs of an inclination to move round. If he fights, patience must be displayed, and a little kindness will go a long way towards giving him confidence. Should he decline to move, it may be necessary to administer a little gentle persuasion with the whip, which should be used by an assistant, as, if the man who holds the

Lungeing a Colt.

line applies or cracks it—the latter will often be all that is required—the colt naturally tries to get away, instead of going round in a circle, as desired. It is a great mistake to lunge a colt for too long at a time when his education is beginning, as it not only sickens him of the whole thing, but he is apt to turn giddy ; therefore two or three twenty-minutes or half-hour spells a day, with a reasonable interval between them, are quite enough to commence with, and of course it is not suggested that he should be kept moving fast all through each lesson.

After the colt has become handy, a roller with a crupper

attached to it, and also buckles or rings for the side reins,

Breaking-roller.

should be put on him; and for the first time he should have a bit in his mouth. The latter should be smooth and thick, some persons preferring a straight mouth-piece, and others a snaffle; but whatever may be the pattern selected, the bit should fit easily, and there should be guards at the cheek to prevent the colt drawing it through his mouth. It is

best to let him stand for an hour or so, in order to get accustomed to the feel of the bit and surcingle, and then he can be taken out and lunged as before. As soon as he goes steadily, which may take some days, the side reins may be fastened on each side from the bit to the surcingle, loosely at first and gradually tighter, so that he is taught to carry his head, and to become resigned to the control of the rein. After the colt has learned to go steady under the above conditions, long reins may be substituted for the webbing line, and he can be used to be directed by the reins, so that he will turn or stop as the breaker desires, and understand the reason for the pressure that is brought to bear on him.

Whilst the above course of schooling is in progress, the colt may be gradually introduced to the excitements of the road by being led about on the highways along which other animals and vehicles pass. It is safer, however, to lunge

him before starting, for if he comes out of the stable fresh, he is easily excited, and may struggle, thereby injuring himself, or becoming so scared that he may be timid for the rest of his life. After he has become amenable to the touch of the reins, a saddle or harness may be put on him, the way to proceed being to let him have a good look and smell at them first and then gently to put them on, taking care that the girths or belly-band, as the case may be, are not drawn too tight, and that the collar fits very easily. It is not desirable that the colt should be taken out at once when harnessed or saddled, it being the better plan to let him stand in the stable on the pillar reins for a few hours a day with the saddle or harness on, his exercise being taken with the long reins and cavesson, but the girths or belly-band can be taken up a hole each day until tight enough for business purposes.

If he is being broken to harness it is necessary that everything, the collar in particular, should fit well, and be perfectly sound and strong, for if anything breaks, not only may a serious accident occur, but he may be scared out of his wits. At first he may be led about with part or all of the harness on him, according to the way he is behaving, and knee-caps should be worn to prevent injury if he comes down, every precaution being taken to prevent any part of the harness not in use from flapping against his legs, particularly behind, else he is sure to start kicking. The first vehicle he should go in is a brake alongside a good steady horse who will do all the work, and the earlier lessons should be short, their duration being extended as the colt learns what is required of him. After he is steady in double harness he can be put in a two-wheeled trap, a fairly heavy one, with a kicking strap on, every possible care being taken to avoid his being frightened in any way by the shafts coming roughly against him. Some colts will take to their leather at once, others give a good deal of trouble, in which case the golden gift of patience must be exercised by the breaker. If he is disinclined to move, a man can lead the

pupil, and in any event some one should be at his side in case he stops suddenly, as some will do. In most cases, however, after two or three days between the shafts the process of breaking will proceed smoothly.

When the colt is to be broken to saddle, he may be led about and lunged with one on his back at first, the stirrups being added after he has become steady. Should he be timid it is a good plan to accustom the colt to the feel of a weight on his back by fixing a horse-cloth with something heavy wrapped up in it on the saddle. After that he may be carefully mounted by a light-weight man, who should not be in too great a hurry to get into the saddle. It is best not to upset the colt at this point, else he may always be a difficult horse to mount, and, therefore, before trying to take his seat, the rider should accustom the colt to feeling his weight in the stirrup, and when this part of the lesson is learned, it will be an easy matter in most cases to gain the saddle.

Many teachers adopt the use of a dumb jockey in the earlier stages of breaking, the object being to accustom the colt not merely to the feel of a weight on his back, but to the pressure of the reins in his mouth. The apparatus is no doubt useful in cases, but it is not indispensable for the purposes of breaking. (See *Bits, Cavesson, Schooling, Surcingle*.)

Breast Cloth.—That part of a horse's clothing which covers the breast, extending from the two ends of the quarter piece, to which it is buckled. (See *Clothing*.)

Breast Plate.—A thin strap through which the martingale runs; it goes round the lower part of the neck of a riding horse, and is fastened to each side of the saddle by short straps. (See *Martingale*.)

Breathing.—The normal rate of breathing is ten to twelve breaths a minute, this being, of course, increased by

exertion, though if a high rate of respiration is continued for some time after he has been pulled up suspicions as to his soundness are fully justified. The act of breathing consists of taking air into the lungs by way of the nostrils, larynx, trachea, and bronchial tubes, and expelling it from them by expanding or decreasing the chest through the action of the diaphragm. Hence the great importance of either a wide chest or else a deep one, and of nicely rounded ribs. (See *Blowing, Broken Wind, Roaring, Whistling.*)

Breeching is very useful in assisting the horse to stop the vehicle to which he is harnessed, and to aid him in taking it down a hill, when the weight presses forward upon him, and there is no pole to help as in the case of a pair. The best sort of breeching buckles on to the tugs of the back-band, passing round the buttocks of the horse, but in some cases the ends are fastened to the shafts about 1 foot or 18 inches behind the stops.

Breeders' Societies.—Of late years a very large number of gentlemen who have the constant improvement of the horse at heart have formed themselves into societies for the purpose of encouraging the breeders of the varieties they are interested in. It is to the exertions of the members of such societies that the marked improvement that has taken place in many breeds is due, and it may be added that there is satisfaction in recording the fact that in almost every case the number of members is increasing yearly. The following are the leading horse and pony societies:—

Cleveland Bay Horse Society of Great Britain and Ireland—*Secretary*,
Thos. Curry, jun., Norton Carr, Nunthorpe, R.S.O., Yorkshire.

Clydesdale Horse Society of Great Britain and Ireland —*Secretary*,
Arch. M'Neilage, 93 Hope Street, Glasgow.

Hackney Horse Society—*Secretary*, Frank F. Euren, 12 Hanover
Square, London, W.

Highland and Agricultural Society of Scotland—*Secretary*, James
Macdonald, 3 George IV. Bridge, Edinburgh.

BREEDING

- Hunters' Improvement Society—*Secretary*, A. B. Charlton, 12 Hanover Square, London, W.
- London Cart Horse Parade Society—*Secretary*, Frank F. Euren, 12 Hanover Square, London, W.
- New Forest Pony Association—*Secretary*, H. St Barbe, 72 High Street, Lymington, Hants.
- Polo and Riding Pony Society—*Secretary*, A. B. Charlton, 12 Hanover Square, London, W.
- Royal Agricultural Society of England—*Secretary*, T. M'Row, Bedford Square, London, W.C.
- Royal Commission on Horse Breeding—*Secretary*, J. Herbert Taylor, 12 Hanover Square, London, W.
- Shetland Pony Stud Book Society—*Secretary*, Robert R. Ross, Balmoral Buildings, 67 Green, Aberdeen.
- Shire Horse Society—*Secretary*, J. Sloughgrove, 12 Hanover Square, London, W.
- Suffolk Horse Society—*Secretary*, Fred. Smith, Woodbridge, Suffolk.
- Yorkshire Coach Horse Society—*Hon. Secretary*, John White, the Grange, Appleton Roebuck, Bolton Percy, R.S.O., Yorks.
- Welsh Pony and Cob Society—*Secretary*, James Hamer, Greenfield, Penybont, Radnorshire.

Breeding.—The pursuit of breeding horses is one that is accompanied by a certain amount of risk, owing to the possibility of losses occurring which may undo the work of years. Moreover, although success is morally certain to attend the operations of one man who conducts his business upon a rational basis, by which is meant one who manages his breeding and young stock properly and carefully thinks out his crosses, there is always an element of chance in connection with raising horses, and this may dishearten some men who are not blessed with a spirit of perseverance. The breeder who means to succeed must determine to have nothing to do with animals which possess hereditary disease, as their infirmities are certain to reappear in their stock, if not in the first generation, at all events in the second or the third. He should, in thinking out his crosses, omit no endeavour to ascertain the peculiarities of the family to which the horse he intends to use belongs, in order to satisfy himself that the stallion in question is by his breeding likely

to suit the mare. A haphazard alliance may very possibly result in a good foal being thrown, but the true breeder will look further ahead than the first generation, and will therefore endeavour to assure the new blood which he is introducing into his strain being productive of permanent and beneficial results.

Prima Facie, it must be admitted that the idea of deciding upon a stallion which by his shape and make is likely to eradicate any faults in the mare is a sound one; indeed, it would be infallible were it not for the possibility of the horse inheriting imperfections from his sire or dam, or some remoter ancestors which are liable to appear in his stock. The cautious breeder will therefore make it his business to ascertain all that he can concerning the family to which a stallion he thinks of using belongs; and he can derive a great deal of valuable information in the way of learning how experiments made by others who may have attempted similar crosses have turned out. Were it not for the tendency of all animals to throw back to some more or less remote ancestor on either side, horse-breeding would cease to be the lottery it is, as two animals would go on throwing exactly the same class of stock, which, under existing circumstances, they never do. This fact is, doubtless, in a measure responsible for the pleasure experienced in breeding a good horse, and for the value of the animal when he does appear, as if there were more good horses in existence their value would naturally become less. (See *Atavism, Breeding Studs, Brood Mare, Foals, Foaling, Stallion, Telegony*.)

Breeding Studs.—In selecting a site for his breeding stud the horse owner will be acting in his own interests if he determines to adapt his policy to the requirements of the horse he means to raise. This is because it is a fact beyond dispute that certain points are largely influenced by soil and climate, and hence it is quite possible for the success of a breeder to be jeopardised if his stud farm is situated in a locality which, though it might be perfectly suitable for one

variety of horse, may be absolutely unfitted for the breed he wishes to keep. For instance, the Fen country, though most suitable for Shires, is not a good one for the Hackneys, the soft, heavy land being conducive to the development of hair on the legs, but it does not assist in producing a corresponding hardness of bone, though there may be plenty of this latter.

Many people, moreover, make the mistake of providing an insufficiency of land for the accommodation of their breeding and young stock, the result being that the horses suffer from the effects of overcrowding, and the land itself becomes poor through never being allowed a rest, for every meadow should be permitted a respite, as the ground will become sick if horses are always on it. When the horses are removed it is desirable that some bullocks or sheep should be put on the land to finish it off.

In arranging his stable buildings the breeder should bear in mind that in addition to putting up boxes for his brood mares and providing straw yards with sheds attached for the accommodation of his stock when necessary, proper precautions should be taken for ensuring the comfort and well-being of the stallions. It is often the practice of breeders to keep these horses in very dark, uncomfortable boxes, where they pass miserable existences in perpetual twilight, with absolutely nothing to decrease the prospect of their contracting vices which reduce the value of many stallions, and undoubtedly influence the prices of their foals.

It is necessary, too, for a breeder to satisfy himself that the available water supply is sufficient and of good quality, that the land is free from ergot, which will induce abortion amongst his mares, and that the fences are in good order and capable of keeping the animals within bounds. There should be some meadows lying well back from the high roads so that the in-foal mares which are of a nervous disposition should not be frightened by strange sights and sounds at a critical period; but, on the other hand, a field from which a good view of traffic can be obtained is quite suitable for

young stock, as they thus become familiarised with the outside world. (See *Brood Mare, Foals, Pasture, Soil, Stallion, Water.*)

Breeds of Horses. — More attention has undoubtedly been paid to the breeding of horses in recent times than formerly was the case, thanks in no small measure to the efforts of the various societies of horse-breeders which have been established. The different varieties of leading horses and ponies which are now recognised are all described under their own headings. These are the Arab, Barb, Cleveland Bay, Clydesdale, Hackney, Hunter, Shire, Suffolk, and Yorkshire coach-horse. The ponies include the Polo, Dartmoor, Exmoor, Fell, Highland or Garron, New Forest, Welsh, and Shetland. In addition to the above there are the Australian and Argentine horses, the American trotter, and such valuable continental varieties as the Holstein, Oldenburgh, Orloff, Percheron, and Schleswig breeds, which see.

Brick Paving is a very good flooring for a stable, provided always that it is well laid and the bricks used are hard and not absorbent of moisture. If they are soft and porous the purity of the atmosphere of the stable will be seriously affected. On the other hand, the hard blue bricks often used are excellent for the purpose of paving, and so are the small hard red ones, especially if laid edgeways. (See *Floors.*)

Bridles.—A saddle horse's bridle can scarcely be too plain, especially if it is worn by a neat-headed horse, such as most hacks are, and in the case of a man such additions as a rough lower edge to the nose-band, a stitched nose-band, ornamental cheeks, round reins and the like are simply unpardonable. The bridle, of course, should fit properly, a tight or loose nose or brow-band being unsightly, and care should be exercised to ensure the bit fitting properly at the

corners of the mouth, as if it hangs loosely the horse is not under proper control, whilst if too tight it injures the lips. Lastly, the throat lash must only be tight enough to keep the bridle in its place; if it is buckled up too close it interferes with the animal's breathing, and is a source of discomfort to him. (See *Bits, Bitting.*)

Bridoon.—The snaffle bit which is worn by some horses in addition to the ordinary bit. It is attached by reins of its own to a hook in the pad, as in the case of a bearing-rein. (See *Bearing-rein.*)

Brisket is the name of the part situated at the lowest portion of the chest above the elbows.

Brittle Hoofs are the result of an insufficient supply of oil in the horse, and may be the result of fever. An excellent homely dressing to apply is an ointment derived from mutton fat, which may be used on the walls and soles. (See *Mutton Fat.*)

Figure-of-eight
Bandage.

Broken Knees, though not invariably associated with unsoundness and a liability on the part of their possessors to fall, are always unsightly, and may reasonably be regarded as a potential source of weakness and accident. Of course, the importance of this blemish depends upon the nature and severity of the injury.

Treatment.—If the tissues are exposed, and still more if the joint is so cut that the knee grease begins to run, the services of a professional man should be sought for without delay, and in bad cases the patient should be placed in slings. In severe cases the horse should not be allowed to walk a yard further than is positively necessary; but in mild cases he can be taken home and attended to. To commence with, the wound should be

gently yet thoroughly sponged with cold water, as cold as can be borne, in order to check any bleeding and to cleanse the wound, the water being allowed to trickle over the injury from above and not dabbed on if it is a severe cut. Any rough pieces of skin which may be hanging to the sides should be left on, as if they are removed the healing process will be retarded, but they should be placed as nearly as possible in their former positions. Then the wound may be frequently lightly sponged with a lotion made up of tincture of arnica, one dram, water, half a pint, after which it may have a covering of antiseptic lint, kept in its position by a bandage in figure of eight. Should the injury be severe, the horse must be slung, and a veterinary surgeon sent for. (See *Cuts, Slings.*)

Broken Wind is a term that is often unjustly applied to a hard blower, but when a horse is really afflicted by this form of unsoundness, his case may practically be regarded as incurable, though he still may be able to perform some sort of work. Broken wind is usually preceded by a short, chronic cough, the existence of which should prepare the owner of the animal for what is coming, though possibly, if taken in time, it may be alleviated. The symptoms of broken wind are unmistakable, as though the affected horse can inhale air easily and smoothly enough, the action of breathing it out is jerky and usually consists of two distinct efforts. If the flanks are watched carefully during the process of expiration the irregularity is clearly noticeable, and in many cases it is distinctly obvious whilst the animal is quiet, though naturally it is more marked after he has been made to exert himself. The causes of broken wind are principally over-working a horse at a fast rate when he is unfit, and a course of improper feeding, such as mouldy or dusty hay.

Treatment.—There is practically no cure for broken wind, but relief may be gained by limiting the supply of water and by feeding the horse frequently and in small quantities upon grain, bran, and chaff that has been well damped—dry food,

especially long hay, results in an aggravation of the evil—whilst a periodical dose of linseed oil will be found of assistance to him. (See *Coughs, Grunting, Hay, Roaring, Whistling.*)

Bronchitis or Inflammation of the bronchial tubes is scarcely a disease for the amateur to treat single-handed, but still circumstances may easily arise under which he is compelled to do his best for the horse.

Symptoms.—A quick pulse, high temperature, and rapid breathing, accompanied by dulness and a redness of the lining of the eyelids, and generally by a nasty dry cough which clearly causes pain; whilst there is an unmistakable rattling sound produced by the air passing through the bronchial tubes if one's ear is placed against the sides.

Treatment.—The horse should be placed in a large, airy box, but entirely out of the reach of draughts, and his back and sides fomented with hot water. After he has been dried,

rub linament on his chest and put on warm clothing; rub the legs well and put on woollen bandages. If the breathing becomes worse linseed poultices or mustard may be applied to the sides, and he may be allowed to inhale steam, the water in the nose-bag being mixed with chaff to prevent its splashing. Give him plenty of cold water to drink, but knock off all his dry food, feeding him on gruel, mashies, green meat, or scalded carrots. (See *Fomentations, Gruel, Mashies.*)

Inhale for use in cases of Bronchitis.

Brood Mare.—Although it very often follows that a mare that has been a first-rate worker develops into a successful dam it is not invariably the case, and as often as not the failure is due to an absence of proper care in the selection of the stallion. Ill-judged motives of economy on the part of her owner, or a disinclination to search too far afield for a suitable sire, have ruined the reputation of many a mare, which has done far better later on in other hands; hence the necessity of exercising discretion in choosing a horse to put her to.

The principal points to be sought for in a brood mare, irrespective, of course, of her breeding, which is a most important matter, are a sound constitution, a good roomy middle piece, and a set of short flat legs, whilst it is essential that she should be free from the taint of hereditary disease. Her style of going, too, is a matter for consideration in the case of most varieties; but it may here be pointed out that it very often occurs that a beautiful riding or harness mare may possess faults which are calculated to depreciate her merits as a brood mare. A light-boned, narrow, tucked-up mare may make a fine show under saddle, or between the shafts, but she is not the stamp to breed from, and hence the mistake so many judges make when they confuse a brilliant display on the part of a sensational mover with the sort of merit that should attach to a mare whose duty it is to shine as a breeder. On the other hand, a mare which has proved herself a good worker usually throws a good foal.

It may be pointed out, too, that the tendency of the day is to favour the stallions which possess their full share of quality, the prevailing belief being that the horse has more to do with the finish of the foal than the dam, the latter being thought to be chiefly responsible for the internal organs of the foal. It is therefore doubly incumbent upon breeders to select the old-fashioned, long, low stamp of brood mare, so that her substance may counteract to some extent any tendency towards lightness that may exist on the side of the stallion. The parents which lack substance

are practically certain to breed a light foal, and, consequently, if, as is usual, the horse is inclined to quality, and possibly to weediness, the dam should be on the substantial side.

It is impossible to draw any hard and fast line as regards the age at which a mare should be bred from, as some very young ones, such as three-year-olds, have produced excellent foals, and so, too, have mares which have reached the limits of the twenties. As a rule, however, four years old is quite early enough to commence; but there are exceptions to every rule, and if a filly looks like overgrowing her strength, and a check is desired to be placed upon the way she is shooting up, this will often be accomplished by breeding from her. Under any circumstances it is essential that an in-foal mare should be well nourished, not necessarily over-fed, as it must be always remembered that the goodness of the foal will depend to a great extent upon how the dam is kept whilst she is carrying him. It is the worst possible policy, therefore, to keep in-foal mares upon poor land, or to deny them a sufficiency of good, wholesome food if they are in the stable. There is no necessity at all for not working a brood mare until within a week or two of the date when she is expected to foal, but work must not be fast or of an exhausting nature during the latter part of pregnancy. Under any circumstances she should not be denied exercise, and reasonable care should be taken to ensure her bowels being kept open, as if they become constipated injury may result to the foal through her straining to relieve them. Consequently, mares kept in the stable or straw yard should be supplied with grass or other green food, with the addition of an occasional bran mash if necessary. (See *Breeding, Foaling, Imagination, Inversion of the Uterus, Saturation, Stallion, Weaning.*)

Brougham.—A four-wheeled closed carriage for one or a pair of horses used for private purposes. Broughams are either double or single, the former providing seats for four persons, the latter for only two. In either case the front

MR RICHARD B. EVAN'S CHAMPION HACKNEY MARE, DISTRICT MAID.
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upper portion of the vehicle is of glass, the upper back panels are always of wood. (See *Carriages*.)

Brow-band.—That part of a bridle or head collar which passes above the eyes across the forehead. (See *Harness*.)

Bruised Oats form a useful food for sick or young horses when mixed with chop. They are also to be recommended when the digestion is impaired by reason of bad teeth, old age, or a habit of bolting food. Bruised oats should be carefully purchased, if they are not prepared on the premises, as grain of inferior quality may be supplied. As they do not keep so well as whole oats, large quantities should not be laid in. (See *Feeding, Oats*.)

Bruises may be caused by accidents of many sorts and are invariably associated with tenderness of the part affected and occasionally by swelling. The first thing to do is to reduce the pain by fomenting the bruise at frequent intervals; and then, should there be a swelling and the skin is unbroken, some liniment may be rubbed on it. (See *Cuts, Fomentations, Liniments*.)

Brushing.—A horse is said to brush when he strikes one fetlock joint with the hoof of the other side as he moves. The injury is more usually associated with the hind-legs than with the front ones. Brushing is due to several causes, the chief of which are faulty shape or action and bad shoeing. In the latter case it may be remedied; in the former ones it will probably remain incurable. Should the injury be temporary, the fetlock should be protected by a boot of some kind, and a dressing of carbolic acid—one pint to forty of water—may be applied. (See *Boots, Bruises, Cuts, Speedy Cut, Yorkshire Boot*.)

Brushing.

Bucket.—An indispensable stable utensil which should be made of wood.

Buck Eye.—A term now applied to a prominent eye which is usually believed to be associated with short sight. In days gone by the expression conveyed an exactly opposite meaning, being used when referring to a small-eyed animal. (See *Eyes*, *Pig Eye*.)

Buckjumping, or bucking, as it is often called, is a not uncommon cause of disaster to careless or bad riders. It consists of a sudden upward spring on the part of the horse, which lifts all his legs off the ground at the same time and simultaneously arches his back and lowers his neck. Bucking is a far more common vice amongst horses raised on ranches than amongst those who have been handled whilst young, but bad breaking and unnecessarily severe bits account for many cases, whilst sometimes horses indulge in a playful buck simply because they are over-fresh.

Buck Knees.—Knees which turn inwards towards each other. (See *Knees*.)

A Buffer.

Buffer.—An instrument used by shoeing smiths for removing the clinches out of the ends of nails when taking a shoe off. (See *Clinches*, *Shoeing*.)

Buggy.—This name is now applied to any form of Stanhope gig, but it is generally understood to denote the higher grade of Stanhope gig with leather hood, closed panels, and the orthodox buggy suspension, as illustration. The lighter and cheaper styles of buggy are called Stanhope gigs.

Bunt.—A fungus which attacks grain, rendering it unfit to eat. It takes the form of an almost black powder and smells like fish, the stalks and ears becoming shrivelled up. (See *Mildew, Rust*.)

Hooded Buggy.

Burst Blood Vessels.—Horses not infrequently suffer from these as a result of over-exertion, and the tendency to do so is undoubtedly hereditary. In such cases the blood may either gush from the nostrils, in which event it may be assumed that a large vessel has been injured, or it may only trickle, which shows that it is not a very serious matter. *Treatment* must depend upon the severity of the bleeding, but in any case the front of the head from the nostrils upwards should be bathed with the coldest water procurable, or have ice applied; the object being to get the blood to coagulate, and so to stop the bleeding. In severe cases a solution of acetate of lead or tannic acid may be injected up the nostrils, but this duty should be performed by a professional man. After the bleeding ceases, the horse should be kept very quiet and cool for some days, and his work for some time should be extremely light.

Buttock.—The part at the back of the thighs. The point of the buttock is the part which projects out a few inches below the tail. (See *Points*.)

Buying.—When purchasing a horse the inexperienced buyer should bear well in mind the moral of the legal axiom "*caveat emptor*," as pitfalls beset the inexperienced on every side. It unfortunately happens, however, that most people who are in want of a horse regard themselves as judges, not merely of conformation, but of soundness, and retain this opinion until they discover that they have been victims of a misplaced confidence in their own judgment. Occasionally, too, a prospective purchaser relies upon the advice of a friend as ignorant as himself, but who likewise professes to know all about horses, and in such cases the result is usually disastrous. The best way for a man who possesses no knowledge of horse-flesh to proceed is to go to a dealer whose character stands high—there are many of these—and whose position would prevent him being party to a fraud; the additional price he may have to pay will probably be justified by results; or, failing this, he may receive assistance from the head of one or other of the great firms that hold periodical sales of horses. Unless a person is a thoroughly practical judge and possesses a knowledge of veterinary practice, he should be very careful in dealing with private individuals who advertise horses, and particularly with those who make it a practice to do so. Some of these people are undoubtedly perfectly honest, but, on the other hand, a considerable proportion of them are quite the reverse; and hence the inexperienced are certain to receive better treatment at the hands of an avowed horse-dealer or breeder who has a reputation to lose.

In buying a horse, in addition to the question of soundness there are certain objectionable points or malformations which, excepting under exceptional circumstances, should cause the purchaser to seriously consider the rejection of the animal. Amongst these may be enumerated short, straight shoulders, weak or straight pasterns, in-turned and out-turned toes, a long back, weak loins, a short thick neck, a pig eye, flat sides, sickle hocks, cow hocks, thin, odd, or contracted feet, and (for riding purposes) low withers.

As regards action, it may be added that a horse which goes close either before or behind should be rejected, whilst, of course, such decided faults as brushing, over-reaching, and speedy cutting should never be overlooked. (See *Auction Sales, Repositories, Soundness.*)

C

Cabriolet is a cab-shaped gig with leather hood and a standing-board behind for a small servant or groom. The cabriolet was at its zenith of fashion in the early Victorian era, but has now gone quite out of favour and is seldom or never used.

Calculus.—A hard lump of matter resembling a stone which forms on the intestines of horses as a result of swallowing dusty food, or a minute particle of wood or metal which lodges in the inside and provides a centre for part of the food to attach itself to. The substance in time becomes hard and stonelike, and eventually causes inflammation and death. As a proof of how such calculi originate, it may be mentioned that the famous St Leger winner, Robert the Devil, died from the effects of one which had formed round a small piece of zinc which he is believed to have gnawed off his manger; whilst a half-sovereign was discovered to be the nucleus of a calculus which killed another famous horse.

Calf Knees are knees which bend backwards from the perpendicular. (See *Knees.*)

Calf Knees.

Calkins.—The projections caused by bending down the heels of a shoe in order to afford a secure foothold for the

horse. They should never be used in the case of light horses which have to travel fast along hard roads, excepting in cases of emergency during frosty weather, or if the foot is diseased, which may make it necessary to raise the heel temporarily, as the height of the calkins throws the weight of the body towards the toes. Occasionally calkins are on the toes of shoes. (See *Frost Nails, Shoeing.*)

A Cankered Foot.

Canker is one of the most serious ills that affect the feet of horses. It more often attacks the hind-feet, and can be recognised by its evil smell and a fungoid growth on the soles of the feet, which sometimes spreads to the wall of the hoof. As a matter of fact, the hopes of a cure are very slight, and under any circumstances canker is beyond the art of the amateur to treat successfully, so the services of a professional man should be obtained. (See *Thrush.*)

Cannon Bones.—The large bones which lie between the knee and the fetlock on the fore-leg, and the hock and the fetlock on the hind ones. At the back of the cannon bone are situated the outside and inside splint bones, the back tendons, and the suspensory ligament, which see; also *Bones, Conformation, Splints.*

Canter.—This form of action can scarcely be regarded as a natural one, but rather as a reduced form of gallop. A horse at the canter moves rather obliquely, with the shoulder on the side of his leading leg, which is usually preferred to be the off one, slightly in front of the other. Assuming

that he leads with the off fore-leg, his feet come to the ground as follows : first the near hind-leg, then the off hind- and near fore-leg simultaneously, and lastly the off fore-leg. Then the three-time movement is repeated, from which it will be seen that the leading leg does most of the work, and therefore it is a relief to the horse if the rider makes him change it after a while. If it is necessary to turn a horse in a circle when he is cantering, such as is the case at shows, it is desirable that the leading leg should be the outside one, else there is a chance of his crossing his feet and coming down. (See *Action*.)

Cantharides.—See *Spanish Fly*.

Cantle.—The cantle of a saddle is the highest part at the back. (See *Saddle*.)

Capillaries.—Minor blood - vessels connected with the arteries. (See *Arteries, Heart, Veins*.)

Capped Elbows are swellings on the elbow, caused by the heel pressing against the elbow when the horse lies down.

Capped Elbow.

Elbow Boot (to prevent capped elbow).

The application of tincture of iodine may succeed in reducing them ; but sometimes they are removed by the knife. If so, this is the work of a professional man.

Capped Hocks are soft excrescences which appear on the points of the hocks, and are usually the result of a horse injuring himself when kicking, or from his coming into contact with some heavy and hard substance. Though unsightly, capped hocks are not serious matters, and are not regarded as proofs of unsoundness.

Capped Hocks.

Treatment.—Capped hocks of old standing are incurable, but if when they first appear they are fomented with hot water for a couple of days, and then painted for three days with strong tincture of iodine, they may be reduced. If necessary, this treatment may be followed by blistering. (See *Blistering*, *Prescriptions*.)

Carbolic Acid is a most valuable disinfectant, and likewise extremely useful as an application in a diluted form—about one part in twenty—to wounds. (See *Medicines*.)

Carotid Artery.—The large artery of the neck which with the jugular vein lies below the œsophagus and above the trachea. (See *Arteries*, *Bleeding*.)

Carpus.—The knee.

Carriage of Horse.—A horse is said to carry or wear himself well when he moves with his head and tail up, and goes in a free and lively fashion. (See *Action*.)

Carriages.—The following are the names of the different best known varieties of vehicles, some of which are practically of an obsolete type. For descriptions of them see their respective headings—*Barouche*, *Brake*, *Brougham*, *Buggy*, *Cabriolet*, *Char-a-Banc*, *Chariot*, *Coach*, *Curricie*, *Dog-cart*,

Drag, Gig, Governess Car, Jaunting Car, Landau, Lorry or Lurry, Mail Phaeton, Ralli Car, Road Waggon, Sleigh, Sulky, Victoria, Wagonette.

Carriages, Care of. — Carriages should be kept in a fairly warm coach-house, for which reason there should be means of heating them in very cold weather. The place should be lighted by a small window, so placed that the sun cannot beat upon the vehicles, and the latter ought always to be kept covered all over by a calico or other sheet when not in use. The cushions should be brushed and placed inside, and the sooner the carriages are washed after coming in the better, as it is easier and less likely to injure the varnish on the panels and the leather-work if the mud is removed before it cakes on. Outside the coach-house there should be a paved space, sufficiently large to allow the carriage to stand on it with a few extra feet all round; this pavement ought to slope very gently towards a drain, so that the water can run off quickly. There should also be a tap for filling the pails and another for connection with the hose, which ought to be used in washing carriages. After the hose has been allowed to play upon the outside and under the carriage, all mud and dirt should be carefully sponged off and the parts dried with cloths and leathers. When the wheels are washed it is necessary to raise them by means of a raiser or setter placed under the axle, so that they will spin round. The use of the spoke brush is not recommended, though all servants like to do so as it saves them time and trouble, but if used carelessly the hard back of the brush is liable to injure the paint and varnish, so a large sponge and plenty of water are better for the purpose. When thoroughly dried the carriage should be taken back to the coach-house at once, in order to avoid its getting dusty, and if it possesses a hood, as in the case of a Victoria, the latter should always be put up, as the leather is apt to crack if it is left down too long. (See *Coach-house, Setter.*)

Carrots are a most excellent food for horses, and incomparably the best of all roots for animals in hard work. All horses like them, and many a shy feeder will be tempted to eat a carrot when he will refuse all other food. It is necessary that they should be sliced up small, cutting them lengthways, else pieces are liable to get lodged in the throat. (See *Choking, Feeding, Laxatives.*)

Cart-horse. — A general term applied to the heavier varieties. (See *Clydesdale, Shire, Suffolk.*)

Cartilage is a species of gristle which connects and protects the ends of the bones.

Casting Coat.—Horses cast their coats in the spring, either early or late according to the weather, a cold winter and delayed spring causing the winter coat to come off slower. It is never wise, if it can be avoided, to clip a horse at this time, as the operation does the summer coat no good ; but in a very late season it is sometimes necessary to do so, if the coat has grown sufficiently to spoil his looks or to cause him to become overheated. A good deal of extra grooming and warm clothing will usually accomplish much in the way of getting the coat off, but care must be taken to prevent him catching cold. (See *Clipping, Singeing.*)

Casting Horse.—There are several methods of casting a horse, but that explained in the accompanying illustration is as simple and safe as any when there is a refractory animal to deal with. It consists of a rope looped round the neck, from which lines extend to behind the back pasterns, where they cross and return to the loop at the neck, whence they are extended to behind the horse. A man takes hold of each end and a third holds the horse by the halter. On the ropes being pulled the hind-legs are brought forward, and a slight push at the shoulder from a fourth man will bring the animal gently over on to his side, where he can

be easily kept if his head is pulled over towards the shoulder, and then his legs can be secured if it is necessary to do so.

Casting Tackle.

A truss or two of straw should be provided for him to fall over on.

Castors, also styled chestnuts, are the callous, horny excrescences which horses possess above the knees and below the hocks on the inside of their legs.

Castration.—The desirability, nay, the necessity, of subjecting superfluous stallions to the operation of castration must be admitted by everybody who has studied the question of horse-breeding, as what he has seen and learned cannot have failed to convince him that countless most undesirable sires are bred from every year. It is, however, probable that a mistaken, but none the less very widely-spread belief that it is dangerous to use stallions for work in saddle or harness, is mainly responsible for the large proportion of castrated males, or geldings as they are usually described, which are to be met with in England. On the continent the proportion of geldings to stallions is not nearly so large, and there are evidences in this country

that the prejudice against working entire horses has considerably declined. On the other hand, the existence of unsound and in other ways undesirable stallions in large numbers is a serious menace to the success of horse breeders in any district, as there is an ever-present prospect of such animals being used for breeding purposes to the detriment of horse-flesh generally. The operation of castration or gelding is usually performed when the colt is from one to two years old, but it is frequently postponed until a later age in order that the crest and masculine appearance may be more developed. Many cases, moreover, are known in which stallions which have sired foals have been castrated when quite of middle age in order to develop them into exhibition harness horses. There is, of course, an additional risk attached to the performance of so serious an operation upon an old horse, and it not infrequently occurs that the intentions of his owner are thwarted by a subsequent loss of action, though numerous exceptions to this might be quoted. The best periods of the year for the operation to be performed are the spring and autumn, when the weather is neither too cold nor too hot, as extremes of temperature increase the risks and delay recovery. Under any circumstances the operation and subsequent treatment should be entrusted to a professional man to perform. (See *Gelding, Stag, Stallion.*)

Cataract consists of a speck upon the pupil of the eye which may cover only a part of the organ, or all of it. In the latter case it causes blindness, and is easily recognised, but in the former it is not so easy to detect and constitutes a serious danger to those using the horse, as his impaired vision is apt to make him shy. If a cataract is suspected, darken the stable and hold a lighted candle in front of the eyes, when the speck will be seen in the pupil. There is no cure for cataract but an operation of a very delicate nature, which only a skilled professional man is capable of undertaking with any prospect of success. (See *Eyes.*)

Catarrh is a form of cold which, if taken in time or if present in a mild form, is a matter of little importance, but, on the other hand, if allowed to develop, it may become a serious matter. The ordinary symptoms are dulness, shivering, and a discharge from the nose, usually associated with fever.

Treatment.—Place the patient in a warm but well-ventilated box apart from other horses, clothe him warmly, and wrap his legs in flannel bandages. Reduce his allowance of corn to a minimum and give him warm soft food. Should there be a cough, rub his throat with liniment, and if his bowels are confined, give him an enema of tepid water. A small quantity of nitrate of potass in his water may also prove beneficial, but in the case of an ordinary chill, nursing and quiet are the great things. Should his temperature increase, his cough become worse, or his breathing quicker, advice should be obtained, as a cold often leads to serious illnesses if neglected. (See *Bronchitis, Pleurisy, Pneumonia.*)

Cats.—A good mouser is a valuable addition to every stable, as not only do most horses, and especially those which are kept by themselves, enjoy the society of a cat, but anything which keeps down mice—as these animals destroy more food than they consume—is useful. There is often a difficulty in keeping the stable cat in his proper place, however, and therefore on no account should the animal be allowed to come into the house, and he should never be fed or given his allowance of milk anywhere but in the stable or harness-room. (See *Mice.*)

Cavalry Horse.—The class of horse required for ordinary cavalry purposes is one that conforms to a considerable extent to the requirements of the hunting man. Hence he should be short-legged, with good sloping shoulders, and possess his fair share of thoroughbred blood. It is essential, moreover, that he should be up to weight, and hence he must

have plenty of bone, a good back and quarters, and sound feet. All these requirements are necessarily difficult to procure at regulation price, and would probably be beyond the reach of Government buyers were it not that breeders of hunters, unfortunately for themselves, are generally in the possession of misfits which they gladly dispose of. The favoured height in this country is about 15 hands 3 inches or over, but there can be little doubt that smaller animals more of the cob type would be better able to endure hard work, and the smaller ones are favoured by several foreign governments. (See *Charger*.)

Cavesson.—A sort of head collar which is worn by young horses when being broken. It is made with a throat and cheek straps, and has a stout padded nose-band with a covering of iron, and there is one ring on a swivel in front and one ring on each side of this nose-band which is kept in position by a strap which goes up the forehead. (See *Breaking*.)

Cement Floors.—See *Floors, Stables*.

Chaff is in a general sense merely hay cut up small so as to render it capable of being mixed with the horse's corn. Chaff may, however, be composed of clover, straw, or other substances in addition to hay, as may be required. (See *Feeding, Hay*.)

Chafing.—See *Galls*.

Chain Snaffle.—A bit, the mouthpiece of which is of chain instead of being, as usual, solid metal. (See *Bits*.)

Chapman's Horse.—See *Pack Horse*.

Char-a-Banc.—A four-wheeled open vehicle constructed to carry a large number of people, who sit with their faces towards the horses, a gangway running up the centre of the char-a-banc. There is often a second seat behind that of the driver, as in the case of the brake. (See *Carriages*.)

Charger.—An officer's first charger, if not thoroughbred, should be as near it as possible. He must be up to great weight if required to serve in any of the heavy regiments, and his shoulders and bone should be of the best, whilst he must show plenty of heart room, and possess good quarters. There are plenty of first-rate chargers produced by hunter breeders which find their way into the possession of military men, and these possess more bone and substance, and are therefore masters of more weight than the average thoroughbred. The second charger should be on the same lines as the other, but he is not required to be so valuable a horse, nor is he always entirely free from minor blemishes which would not be passed over in the case of an animal required for parade purposes. (See *Cavalry Horse*.)

Chariot is a four-wheeled carriage and under-spring carriage with a body made to carry two persons. It has hammercloth and standards in front and carved standards and standing-board behind for two or more footmen. The body is shaped like a coach body behind and has a brougham shaped pillar in front.

Charlier Shoe.—The main object of the Charlier method of shoeing is to permit the sole, bars and frog of the foot to be left untouched by the farrier. In order to accomplish this and at the same time to protect the horn of the hoof, the shoe is fixed, not to the side, but in a groove of the outside wall. So as to allow for this the groove is made all round the outside of the hoof in such a manner that it will exactly accommodate the shoe and allow the frog to rest on the ground. It must, of course, be obvious to everybody that it is far easier to fit a Charlier shoe to some feet than it is to

Hoof prepared for
Charlier Shoe.

others ; but there can be no doubt that in many cases, and for certain roads, the horse travels better if his feet are permitted to discharge their natural functions in as natural a manner as possible. Nor can it be denied for an instant that the feet of countless horses are seriously, if not permanently, injured through their soles, bars, and frogs, being tampered with by shoeing-smiths. (See *Shoeing, Shoes.*)

Chaunter.—See *Bonnet.*

Check Rein.—See *Overhead Check Rein.*

Chest.—The chest of a horse is situated behind the fore-arms, and should always be deep in order to provide a sufficient amount of space for the heart and lungs to work in ; and, consequently, a horse that is well let down behind the fore-arms and possesses the right sort of bent ribs is what is wanted. A breadth of chest, of course, supplies more room for the internal organs than a narrow one, but if a horse's fore-legs are placed wide apart, that is, if he has a considerable width of chest, he is usually deficient in speed when compared with a narrower chested member of his own variety. On the other hand, width of chest is usually associated with stamina and strength, therefore in breeds in which speed is not a primary consideration a narrow chest is not considered desirable.

Chestnuts.—See *Castors.*

Child's Pony.—The selection of a pony for a juvenile member of the family must depend a good deal upon the age and disposition of the child. For very small children a Shetland may be recommended, but unless there are other and younger boys and girls who may have some use for him afterwards the Shetland is soon outgrown by his juvenile rider, especially if the latter is ambitiously inclined and desires to accompany grown-up people in their rides,

as the little pony could not keep up with the bigger horses. A Dartmoor, Exmoor, or Welsh pony is therefore to be recommended, as these are most admirable rides for children if properly selected, and excellent specimens not much over 12 hands can be procured. It may be added that a very broad-backed pony should not be selected for a boy to ride. (See *Dartmoor*, *Exmoor*, *Welsh*.)

Chills.—See *Catarrh*.

Chin Groove.—The ridge at the back of the under lip where the curb chain should rest.

Chink Back.—See *Jinked Back*.

Choking.—If the obstruction cannot be reached by the fingers or any form of tweezers which may be available, an attempt to assist it to pass down the gullet may be made by gently manipulating the outside of the throat. Sometimes a dose of oil and water, repeated if necessary, may enable the horse to either eject or swallow the mass. Failing these, the smooth handle of a whip, or a piece of rope, the end of which has been well lashed round with twine, may be passed down the gullet after having been well greased, care being taken to avoid the wind-pipe. As a desperate resort, the neck may be opened to remove the obstacle, but this is a dangerous operation for an amateur to perform, owing to the risk there is of blood vessels being cut. Extreme cases, however, necessitate immediate treatment, and so risks have to be taken. Subsequently to this operation the wound must be sewn up, and the horse must be kept from food for as long as it is safe to do so, and then only given mash. (See *Stitching Wounds*.)

Chop.—A mixture of corn or roots, or both, with bran and chaff. (See *Feeding*.)

Clay Bedding.—A clay bed made of damp clay assists in cooling the feet in cases of inflammation, such as navicular disease. The horse should be kept standing on it during the daytime and be removed to his box of a night.

Cleaning Harness.—The proper way to proceed is to take the harness to pieces so as to ensure all the metal and leather-work being thoroughly cleansed, attended to, and dried ; but this is not possible in every stable. First remove any mud, using a slightly damp sponge and some sound soap which will not spoil the leather, if necessary applying a brush to the parts from which the sponge fails to remove the dirt. The less water used the better, and when the leather is perfectly dry the compo or paste may be lightly applied with a brush and polished with another one, but these brushes must not be hard, or they will scratch the surface.

Clean Legs.—Legs which are free from blemishes. (See

Clean Fore-legs.

Clean Hind-legs.

Curbs, Knuckling Over, Spavin, Splints, Thoroughpin, Wind-galls.)

Cleveland Bay.—This very valuable variety of carriage horse derives its name from the district in which it is popularly believed to have had its origin, and no doubt the north of England has always been its stronghold, though as a fact most of the best Clevelands of the present day hail from Yorkshire. The original source from which the Cleveland Bay was derived was, doubtless, the old Chapman's horse of our forefathers, improved unquestionably by crosses with the thoroughbred ; a distinct variety of horse with plenty of individuality about it being the result of a systematic course of breeding. A hundred years ago and more, that is, about the middle of the eighteenth century, the Cleveland Bay was a far heavier horse than he is now, but this was not by any means detrimental to his popularity, in fact quite the reverse, as roads were worse and vehicles heavier in those remote days ; in addition to which, the agriculturalists who bred them were always able to put their Clevelands to honest work upon the farm until sold. Even at the present time the Cleveland Bay is a somewhat plain horse, especially about the head, when compared with some other breeds, but he is a grand-looking worker in a heavy landau or state coach, and frequently an extremely good mover into the bargain. He is, moreover, undoubtedly the most powerful of all the British varieties of light horse, there being plenty of specimens standing 17 hands high, and over, to be found ; and it may be added that the only recognised colour is bay, with black points, but a dark list or eel mark along the back is permissible, as are dark Zebra-like stripes across the thighs. (See *Breeders' Societies, Breeds, and Yorkshire Coach-horse.*)

Cleverness may be described as an aptitude possessed by some horses for extricating themselves from difficulties which may unexpectedly arise. Thus if a rider falls a clever

horse will avoid treading on him, or if the animal itself blunders over a fence, or stumbles on the road, his cleverness may save him from coming down. A horse to be able to exercise his natural gift of cleverness may be expected to have well-developed brain-power, a nice, light fore-hand, well-placed, lengthy shoulders and powerful quarters. (See *Brain*.)

Clicking.—See *Forging*.

Climate undoubtedly affects the growth of a horse, those bred in cold regions being small and those under genial climates big. Of course, the nature of the soil and other circumstances influence size as well, else the horses of the East would certainly be larger than they are. A damp climate promotes the growth of horn on the hoof, but it depreciates its quality by making it soft. A similar observation applies to muscle and to the density of a horse's bone, a most important fact which should be borne in mind by breeders. Horses imported into hot climates from temperate ones usually suffer a great deal from the effects of the heat for a while, but as a rule they become acclimatised after a time, though some never get over the change. (See *Bone*, *Breeding Studs*, *Foot*.)

Clinches.—The ends of the nails which appear outside the hoof after they have been driven through the shoe and wall. These ends should be driven into the wall of the hoof to prevent the nails from working out. (See *Buffer*, *Shoeing*.)

Clip.—(a) The part of the shoe which turns up in front of the toe, and in some cases at the sides of the hoof. (See *Shoeing*.)

(b) An American expression, equivalent to an English term "burst" or "dash" used to denote a horse's speed over a short distance.

(c) A term applied in some places to young horses during the long-tailed period of their existence before they are broken.

Clipping.—It is customary to clip the coats of most light horses, such as hunters and carriage horses, during the winter months. The reason for this is that it is much easier to dry and groom an animal that has had his long coat removed than it is to attend to an unclipped one; whilst it may be added that horses look better with their coats off, and get over the ground at a fast rate without sweating nearly so much. Of course, it is not invariably necessary to clip a horse if appearances only are studied, as a prolonged course of daily grooming, very warm stables, and an extra allowance of clothing will accomplish much in the way of keeping the coat fine and short. It is not, however, every groom that can spare the additional time to his horses of a morning, whilst the hot stabling and heavy clothing increase the chances of their taking cold when out-of-doors, so it is the best and safest course to apply the scissors. Horses which have been clipped should not be allowed to stand about more than is absolutely necessary when at work, and if it is impossible to avoid their doing so, a rug, or at least a loin cloth, should be placed over them to minimise the prospect of chills being contracted.

As a rule it is not necessary to clip a horse before his winter coat is fully grown, but circumstances alter cases, and not only do the coats of some horses come on faster than others, but the warmth or coolness of the season naturally affects the growth; still, the end of October is about the usual time for operations to commence.

A good deal of experience is required to clip a horse properly, and if the work is badly done the appearance of the animal is simply ruined. It is absolutely necessary, therefore, to be sure of the ability of the clipper before allowing him to get to work, and therefore if an owner has any doubts as regards the competency of his own man, the wisest course for him to adopt is to engage a professional clipper, as the few shillings charged will be well laid out. Of late years the difficulty of clipping a horse has been largely reduced by the manufacture of specially designed

machines of various makes ; but it may be added that whilst some of these are admirably adapted for the purpose, others are practically useless.

Opinions—perhaps it would be more correct to say tastes—differ somewhat as regards the style in which horses should be clipped, it being a common practice amongst hunting men to leave the coat in its natural condition under the saddle, so as to avoid the risk of a sore back, and not to touch the legs at all. Some owners of harness horses who do not study the appearance of their animals subscribe to the latter view, the object in either instance being to reduce the chances of mud fever. (See *Mud Fever, Shaving, Singeing.*)

Clothing.—A most important factor in the well-being of a horse is a rational system of clothing him. Upon this subject it is not unusual to find the opinion of masters and their servants radically opposed to each other, as, apart from a tendency to unduly coddle their horses which possesses some grooms, there is the fact that the coat of a horse which is kept heavily clothed is much easier to keep bright than that of one which only stands moderately, and it may be added healthily, warm. It is always by far the best arrangement, though it adds a little to the expenses of a stable, to provide one set of day clothing and one of night clothing for each horse. This enables the set not in actual use to be hung up and aired, for, of course, it is an extravagance to allow a horse to lie down in, and soil, a stylish set of day clothing ; whilst no owner who takes a pride in his stable would like to see his horses out-of-doors in blankets which would be admirably adapted for night wear. Hence the desirability of providing a duplicate suit for each horse, both for summer and winter wear, if possible.

The material of which horse clothing is made varies as much as that used for men's coats or ladies' dresses ; but in all cases the best will be found the cheapest in the end. Therefore wool for day wear and Whitney for night use

CLOTHING

in winter are recommended; whilst cotton check for use during the day, and a thin blanket for night are recommended for summer purposes—a word of warning being added to the effect that if an owner gives an order and pays for wool he should make certain that he gets it. There

Clothing and Bandages.

must, of course, be additional under-cloths provided, excepting in very hot weather, when a plain cotton sheet will be amply sufficient for the daytime, the number and weight of these under-cloths being left to the discretion of the man in charge. The under-cloths, not being seen, may be of any colour or pattern so long as they fulfil their purpose of keeping the horse warm, and can be properly secured upon him. As a rule they take the form of Whitney blankets, which may or may not buckle in front of the breast, though it must be obvious that if several are used they cannot all fasten in front, but that some of them must be kept in place by the roller which goes round the body.

A full set of clothing for day wear consists of a hood (which is very seldom used in the stable, but is worn out-of-doors if the horse is going on a journey, or is being

exposed to cold), a breast-cloth, and a quarter-piece. Occasionally a pad cloth is added to go under the roller, and sometimes the breast-cloth and quarter-piece are united in one piece, known as the quarter-sheet, which buckles in front. It is usual to have the day clothing cut so as to fit the horse, but this is not necessary in the case of night clothing or blankets.

Clover, owing to its holding so much water, is not easy to turn into good hay, as it is apt to become mouldy, and samples, therefore, should be carefully examined. When in good condition it is an excellent food for horses if given in their chop as chaff. It is much liked by them in the summer as a green food, but it is not so good for animals in hard work as meadow hay, and therefore the allowance of clover should be limited in such cases. (See *Chop, Feeding, Forage.*)

Clydesdale is more breedy-looking than the Shire, but is not so weighty, though he is a faster walker and equal to drawing very heavy loads. The breed is essentially a Scottish production, as may be judged from the name it bears, and owes its origin and excellence to the efforts of the Duke of Hamilton, who, about the middle of the eighteenth century, imported some black stallions from Flanders with the object of improving the horses of the south of Scotland. From these the modern Clydesdale has unquestionably sprung, but the skill and enterprise of more recent breeders have effected still further improvements, and, doubtless, the Shire horse was used in many cases to aid the process of development. In the present day, however, the two breeds are totally distinct, each possessing its own Stud Book ; whilst it may be added that the popularity of the Clydesdale in such great cities as Glasgow, Manchester, and Belfast, is unrivalled, and that the exportations to Canada, and other parts of the world where an active, heavy draught-horse is in demand for town work, are increasing annually.

Although there is nothing at all mean or insignificant-looking about the head of a Clydesdale, this point is not so massive as that of the Shire, but he is the more active and refined-looking horse all over. The neck is full, yet elegant, and it is neatly set on to rather long and nicely sloping shoulders, the slope of the latter being important as the liberty of the horse's action depends upon them. The chest is deep and of a good breadth, the fore-legs being heavy in bone and straight, with big flat knees and nicely sloping pasterns of good length for a heavy horse. All the limbs should be well supplied at the back with a profusion of long silky hair quite free from curl or waviness, and not growing on the sides or front of the legs. The body is deep behind the fore-arms, well sprung at the ribs, with nice, flat, lengthy quarters and powerful loins ; whilst the thighs should carry a great deal of muscle, and the hocks be well let down and slightly but not too much bent. The feet of all horses are points of considerable importance, and in none more so than in the Clydesdale, in the case of which breed they must be correct in shape, fairly large, and absolutely free from any suspicion of weakness or unsoundness. As a rule the best horses of this breed are bay or brown in colour, though very often the legs show a good deal of white, which is not liked ; the average height is about 17 hands, or a little less, for stallions, whilst mares as a rule measure less. (See *Breeds, Breeders' Societies, Heavy Horse.*)

Clysters.—See *Enemas*.

Coach.—The modern road coach is very similar to the old stage coach of our fathers' days, but it is better and lighter built and hung on better springs. The park coach, on the other hand, is a very much improved vehicle, the design having been remodelled and all the art of the modern coachbuilder being devoted to the production of a handsome coach which shall at the same time combine lightness with strength. (See *Boots, Park Team, Road Team.*)

Coach-horse.—See *Yorkshire Coach-horse*.

Coach-house.—The coach-house should be airy, well ventilated, yet not cold ; in fact it should be provided with some means of warming it, either by a stove, hot water pipes, or even by a lamp, so that the frost can be kept out when the weather is cold. It should not be dark, and yet the windows ought to be so arranged as to prevent the sun from beating down upon the vehicles. The best of all floors is a cement one, but asphalt or any other smooth surface will suit if laid flat. The doors, if possible, should extend the whole width of the house, and should be provided with stops, so as to keep them open when the carriages are being run in or out, or when they are left open for airing purposes, as they should be in warm weather. Finally—and this is important—the coach-house should be as far away as possible from the manure heap or any open drains, the effluvia from which is injurious to paint and varnish, and outside the door there should be the pavement for standing carriages on when they are being washed. (See *Carriages, care of*.)

Coachman.—Were the ordinary horse owner to exercise a little more care and discretion in engaging his coachman, his horses would do better, and he might not run risks which occasionally threaten him. At the same time a really competent and in every way desirable coachman is very hard to find, and when he is, he should be valued accordingly. Not merely is it necessary that he should be a good driver, but he ought to possess a knowledge of the elementary treatment of diseases and accidents, and be able to decide what bits suit his horses' mouths the best, should his master not happen to be a practical man. To the coachman, under such circumstances, will also be left the responsibility of feeding the horses, the control of the grooms and stablemen, and, what is perhaps of even greater importance, the passing of the forage merchant's, harness maker's, coach-builder's, and shoeing smith's accounts. In short, a good coachman must

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not only possess a perfect knowledge of stable craft and horses, but he must be a conscientious, sober man.

Coat.—A horse begins to get his winter coat about the end of September, and sheds it for his summer one in the spring, the precise times being influenced by the warmth, or the reverse, of the weather. Animals which are out at grass develop coats of quite remarkable density which provide ample protection from the weather unless it is unusually severe, and if the hand is placed under a coat the outside of which is saturated by rain, the skin will usually be found to be quite dry and warm owing to the closeness of the underjacket through which the water cannot penetrate excepting in exceptional cases. Under-bred horses usually carry far more coat and of a coarser texture than well-bred ones, but it is nevertheless an unusual practice to clip or singe cart-horses. The latter are not often clothed in the stables, and hence their natural disposition to carry a heavy coat is encouraged, as the warmer a horse is kept the less jacket he grows. This is, of course, well known to stable servants, and hence their partiality to plenty of rugs on their horses. (See *Casting Coat, Clipping, Shaving, Singeing*.)

Cob.—The term applied to animals of the intermediate height between the horse and the pony—that is, from 14 hands 2 inches to 15 hands at the shoulder.

Cock Horse.—An expression denoting the spare horse which is used to assist a four-horse team in cases of emergency. The cock horse usually is ridden behind the coach, and carries the necessary traces and bar, so that there need be no delay in attaching him to the end of the pole by the means of a rope connected with the bar and passing between the leaders. In hilly countries the assistance of a cock horse is invaluable.

Cocktail.—An old expression designating a horse which is nearly, but not quite clean-bred.

Coffin Bone, or Os Pedis, or Bone of the Foot, lies below the small pastern bone, and a little in front and below the navicular bone. It is the chief seat of laminitis, and rests upon the sensitive sole of the foot. (See *Bones, Foot, Laminitis.*)

Coffin Head.—This term is used to describe a coarse, ugly face, in which the jowl is not sufficiently prominent to relieve the plainness of the lower jaw. Hence the head assumes something of the shape of a coffin.

Cold.—A horse can endure a great deal of cold, provided he is not exposed to draughts, or left standing about when in a heated condition. Hence the great mistake so often made by depriving horses of an adequate supply of fresh air in their stables, and by overclothing them. This only makes them delicate, and liable to contract chills when taken out; but it must always be remembered that there is a vast amount of difference between good honest cold and that which is associated with damp and draughts, than which a stable can possess few, if any, graver faults. (See *Coat, Turning Out.*)

Colds.—See *Catarrh.*

Colic is a common source of trouble to some horses, and particularly to old ones afflicted with bad teeth which prevent them from properly masticating their food. Other causes that may be mentioned are, too deep a draught of cold water when overheated, too large an allowance of grain and hay, worms, overwork, indigestion, and other derangements of the stomach. Many horses suffer severely from attacks of colic, and throw themselves about in their pain at times, injuring themselves thereby in many ways. Sometimes the belly swells considerably owing to the pressure of gases in the stomach, the result of its containing undigested food in a fermenting state, and, if so, relief may be obtained by walking the animal about.

COLIC

Treatment.—The belly should be well rubbed, a wisp of straw being used for the purpose, and three or four ounces of whisky or some other spirit in a quart of tepid water may be administered. Should no relief be experienced from this, two ounces of turpentine—this is the dose for a full-sized adult horse—may be given in a pint of linseed oil; or two ounces of sweet nitre and one ounce of chlorodyne may be administered in a pint of warm water, to be followed by a similar dose of linseed oil, and a linseed meal and mustard

Poultice on the Belly.

poultice may be applied to the belly. If there is reason to believe that the bowels are not acting, an enema of hot water may be given, and this will usually assist in easing the horse if his belly is distended by wind. A purgative dose should also be given later on under any circumstances, and the horse should be kept warm, his ears pulled and legs rubbed. An attack of colic may pass off in a quarter of an hour, or it may continue for a long time, in which case, if the patient appears to be losing strength, professional advice

should be obtained. (See *Inflammation of the Bowels, Prescriptions.*)

Collars.—Great importance attaches to the proper fit of the collar, and hence each horse should always wear his own. If too large, the collar is pretty certain to gall or wring the shoulders, and if too tight it will press on the windpipe and half choke the horse. The best collars are lined with leather and stuffed with horse-hair, and are to be preferred to all others, as the leather does not absorb the moisture and the horse-hair keeps its place better and is more springy than any other stuffing. The inside of the collar should be thoroughly sponged—provided, of course, that it is of leather—when taken off, and in any case should be well dried and aired before being used again, as if worn either in a damp or dirty condition it may injure the skin by chafing. Collars, of course, vary considerably in size, from the heavy ones worn by cart-horses to the narrow ones which can barely accommodate the hames such as are used for show animals. (See *Cleaning Harness, Hames.*)

Colours.—The most common colours amongst horses are chestnut and bay, the former being steadily on the increase, owing, no doubt, to the prepotency of the chestnut sires which have made themselves popular of late. This is particularly evident in the case of the hackney horse, which is rapidly developing into a chestnut breed, to the consternation of dealers who are called upon to supply carriage horses to customers who prefer bays or browns. It may be mentioned, too, that cases in which a chestnut sire and a chestnut dam have been known to produce any but chestnut foals are extremely rare. Browns are still fairly numerous, and so are greys, but black horses are very rarely seen, excepting in connection with funerals. Some difficulty is often experienced in distinguishing a dark brown from a black, but the question can be settled by the colour of the muzzle, as if this is of a light or mealy shade the horse is described as a brown. Both

bays and chestnuts vary considerably as regards the shade of their respective colours, the coats of some bays being very light, whereas others closely approach the brown; whilst a dark or liver chestnut might easily be mistaken for a brown by some people. But it may be mentioned that the tail and mane of a chestnut are never black, and those of a brown are always of that colour, so the difference can be detected. Bay horses usually possess black "points," *i.e.*, legs, tail, and mane, but not invariably so, and all colours are frequently associated with white markings, which usually take the form of a white star on the forehead, and white heels, which are tolerated but not liked. Chestnuts of late years have come to be greatly disfigured by heavy white markings, which detract considerably from their appearance and consequently affect their value.

In referring to chestnut the opinion may be expressed that it is, comparatively speaking, a new colour so far as British horses are concerned, for it is never to be found amongst such old English breeds as the mountain or moorland ponies of Wales and the West of England in their natural state. Consequently, it may be taken for granted that any chestnut ponies which are described as being Dartmoor, Exmoor, or Welsh are not pure, but invariably cross-bred.

In addition to the above colours, roan is, happily, still met with, as horses of this shade are usually robust in constitution and strong. A roan is a horse whose natural colour is shot over with white hairs, which in the case of some animals are nearly as numerous as those of the darker shade. In other cases the light-coloured hairs are very few, appearing only about the loins or at the root of the tail, but still their presence constitutes the animal a roan. The most frequent shade is the red roan, sometimes referred to as the strawberry roan, the general colour of which is a sort of pinkish chestnut, in fact something of the shade known as crushed strawberry; then come blue roans, chestnut roans, bay roans, and brown roans. Grey horses are almost invariably foaled black, or very dark in colour, the white

hairs commencing to make their appearance when the young animals are a few weeks old, when they turn first into roans and then into greys. The exception of the prevailing rule occurs with the Royal white horses of the House of Hanover, which were formerly used in the state coaches of the kings of that country, as these are always foaled perfectly white. The term flea-bitten grey is applied to a horse whose grey colour is flecked all over with small dark specks ; as a rule these appear on old animals. Piebalds are black and white particoloured horses, and skew-balds may be either bay, brown, chestnut, or grey and white, the markings in each instance being pretty equally divided in the handsomest specimens. The dun colour is difficult to describe, as it varies from a yellowish shade of chestnut to a light reddish shade of grey, the latter being frequently associated with a dark stripe or eel mark down the back. The true cream colour is usually accompanied by a reddish tinge of colour in the tails, which are not of the silver or flaxen hue so often met with in both chestnuts and creams. The sorrel colour is a pale, yellowish chestnut, some hairs being of darker shades than the others.

The most common colours of a horse's skin under the coat are black and pink, or a mixture of the two, but there is no rule to go by, and hence occasionally owners are much surprised at the colour of their horses after the animals have been closely clipped. (See *Markings*.)

Colt is the term expressed to describe a young stallion. Opinions differ as to the age when the word ceases to apply, but the general view places it at the time when the horse enters upon his fourth year.

Combing.—Too much combing of the mane and tail is not good, as it removes the hair and makes them thin. However, if a mane is too thick it should be well combed from the under side in order to remove the superfluous hair. (See *Grooming*.)

Concrete is not infrequently used as a flooring for stables, but it is not a good pavement for horses to walk upon, as its surface, being smooth, affords a poor foothold, and if the surface is made rough it soon crumbles away. On the other hand concrete possesses the great advantage of allowing water to run off it quickly. (See *Floors*.)

Concussion is the direct result of fast work on hard roads, and hence cart-horses are rarely attacked by it. The heat and tenderness with which it is associated usually produce severe lameness, which frequently develops into navicular disease, and therefore concussion should be dealt with promptly.

Treatment.—If there is much heat the shoes should be removed and the feet placed in cold bandages, which must be kept constantly damp, for a few hours. A mild purgative may be administered, and the horse should be kept on a cooling diet of mashes and green meat in order to reduce the inflammation. In bad cases he may subsequently be shod with a strip of sponge about $\frac{1}{2}$ inch thick between the wall of his foot and the shoe in order to reduce the concussion. (See *Lameness, Navicular Disease, Prescriptions, Shoeing, Sponge Pad*.)

Condition.—A horse, to be in proper condition, should be at his very best both as regards his looks and his health. For racing or hunting purposes he is naturally expected to carry less flesh than if all that is required of him is easy work at a more moderate pace; but in any instance he must show plenty of muscle, and feel hard to the touch when the hand is run along his crest and neck, or placed against his sides. Condition can only be produced by proper attention to details of management, and it may be added that a fat horse carrying a mass of blubber on his frame instead of muscle presents a most deplorable object to the expert. The expression “proper attention” is used above advisedly, as it is, unfortunately, a by no means uncommon practice amongst horse owners and their servants to make use of

drugs, of the nature of which they are entirely ignorant, to improve, as they imagine, the bloom of their horse's coat and his condition generally. Antimony is frequently used for this purpose, but it is a most dangerous drug to give a horse, and its use in a stable should be absolutely forbidden. It may be added, moreover, that a servant who surreptitiously administers poisonous drugs to his master's horses is liable to imprisonment, no matter how laudable his intentions may be. (See *Exercise, Feeding, Medicines.*)

Conformation.—A very great deal depends upon the shape of a horse, and the structural formation of each breed depends to a considerable extent upon the useful purposes to which it is devoted. Thus the riding horse should have a long sloping shoulder and sloping pasterns, whilst the draught animal requires to be exceptionally powerful about the hind-quarters in order that he can start a heavy load. The above are only generalities, all points of detail being gone into elsewhere, but the mention of them goes to show that the person who desires to purchase a horse for any particular work should satisfy himself, so far as he possibly can by appearances, that the animal is adapted for his purposes. (See *Breeds, Buying, Harness Horse, Points, Riding Horse.*)

Congestion of the Lungs, if present in an acute form, is a very dangerous thing, for its attack is sudden, and if the patient is not properly attended to fatal results may speedily follow. A heated horse coming into a badly-ventilated, stuffy stable is very liable to be attacked, and so are animals which are above themselves in condition, or in a low state of health.

Symptoms.—Dilated nostrils and very hurried breathing, the horse appearing unable to inhale sufficient air. He will therefore often stand with his fore-legs wide apart and his neck stretched out; his legs are generally very cold, though his body may be wet with perspiration.

Treatment.—In the first place, it is absolutely necessary that the patient should be in a warm yet well-ventilated box where he can breathe the fresh air without being exposed to a draught. He should be well clothed, and after his legs have been rubbed until they become warm, flannel bandages should be put on them. The ears should be pulled, and as a temporary relief small doses of spirits may be given at frequent intervals and mustard rubbed on his sides just behind the fore-arms, or a linseed poultice may be tried. Unless an improvement is quickly apparent, a reliable veterinary surgeon should be sent for, else it may be too late. (See *Pneumonia, Prescriptions.*)

Connemara Ponies.—The district of Connemara at one time produced a famous breed of ponies which has, unfortunately, been allowed to degenerate, though attempts are now being made to recover the lost ground. These ponies were noted for their bone, substance, and stamina, and have been largely utilised in producing the famous Roscommon hunters. They have nice flat clean legs, good shoulders, powerful loins, and good quarters, and they cover a great deal of ground for their height. They average from 12 to 14 hands in height, and are extremely robust and hardy in constitution. Eastern sires were at one time introduced into the district, and the heads of many Connemara ponies show signs of this blood. They are very active and gentle, and make good polo ponies.

Constipation is often a source of trouble to horses which are given little work and nothing but dry food. The obvious remedy is a laxative of some sort. (See *Medicines, Prescriptions.*)

Contagious Diseases.—Too much care cannot be taken to ensure the isolation of any horse which is suspected of suffering from a contagious disease; hence the desirability of having hospital boxes attached to every stud. Contagion

differs from inoculation so far that in the case of the latter it is necessary for the germs of disease to be obviously and directly conveyed from one horse to the other, whilst in contagion it is sufficient if the animals have simply touched each other. Thus if one horse is suffering from a disease which produces a discharge which is conveyed to a raw place or wound on a stable companion, the latter becomes inoculative, but if the germs are conveyed by merely the bodies touching, it is a case of contagion. (See *Infectious Diseases, Inoculation.*)

Contracted Feet are those which are abnormally narrow in their shape, and may be described as unusually long, narrow feet. Sometimes both

Contracted Foot.

hoofs are contracted, and sometimes only one; but it does not necessarily follow that a pair of small, narrow feet, if they match in shape and size, should be contracted, as they may be natural to the horse, though undesirable. As a rule, the defect is the result of navicular disease or bad shoeing, the latter being a common cause of contracted heels, which exist when the heels are too close together, and the hoof too narrow behind.

Contracted heels, naturally, are likely to affect the frog and bars of the foot; and thereby cause lameness. (See *Foot, Thrush.*)

Cooked Food, excepting in the case of a sick horse or shy feeder, is not to be recommended as a food for horses. An exception may, of course, be made in the case of a bran mash, which, given occasionally the night before a day of rest, is excellent. Such feeds as a mess of boiled roots are

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bad for horses, as they are swallowed hastily and are apt to injure the muscles of the stomach and intestines. It may also be added, that if barley is given to a horse as food, it is the common practice to boil it first, but barley is not a suitable grain for horses in this country. (See *Feeding, Mashes.*)

Cooling.—The best way to cool down a heated horse when he comes into the stable is to rack him up and, having loosened the belly-band or girths and removed his tail from the crupper, to let him stand for a few minutes. Then the harness or saddle may be taken off and he may be lightly gone over with a wisp, after which a thin loose cloth may be put on him with a little clean straw under it to absorb the moisture. Meanwhile, he must be kept well out of reach of all draughts, and at the end of ten minutes or a quarter of an hour he may be well wisped over and his clothing put on him, for the dressing will make him warm and dry. Should his ears feel cold when he first comes in they should be pulled to restore their natural warmth, and if it is necessary owing to the muddy state of the weather to wash his feet, this may be done, but the legs and heels ought never to be washed whilst the animal is heated, as doing so may assist in producing mud fever. The only parts that water should be applied to are the feet, the dock, the sheath, and possibly the face, but all should be well dried. If the horse's legs appear to be cold they should be well rubbed, and woollen bandages may be put on them. Any mud attached to the limbs can be easily brushed out the following morning when they are dry.

As regards watering a heated horse, the decided opinion may be expressed that there is less risk connected with a drink, in moderation, of cold water when he is very hot than after he has cooled a little, and therefore he should be allowed a few "go downs." Should he be reluctant to pass his water he may probably be induced to do so by standing him on some straw, and after he is dressed and made

comfortable he may be fed. (See *Clothing, Exercise, Grooming, and Staling.*)

Coper.—A horse coper is the man who purchases aged, worn-out, or unsound horses with the object of subjecting them to dishonest practices which may have the effect of misleading inexperienced buyers. (See *Auction Sales, Bonnet, Buying, Chaunter.*)

Cording.—A gratuitously cruel practice of fixing a hard piece of cord round the tongue of a horse and attaching the ends to the bit in such a manner that a slight jerk will cause the cord to cut into the tongue. The idea is that the sudden pain will cause the animal to step higher; but happily the cording practice is now prohibited at shows.

Corn Bin.—The receptacle for containing corn is always better kept out of the stable than in it. A metal bin is far preferable to a wooden one, as it is easier to keep mice out of it, and these pests spoil more good grain by soiling it than they actually devour. The bin should be kept locked, especially at night, not merely to protect its contents, but when it stands within the reach of horses which may get loose, in order to prevent their surfeiting themselves with grain.

Corns.—The feet of some horses are far more likely to be affected by corns than those of others, but all are liable to them, corns partaking more of the nature of bruises than being natural products of a weak sole. No doubt they can be produced by fast work on hard roads, but the cause of their appearance is more often the result of careless shoeing. The seat of a corn is generally near the heel and on the inside between the bar and the frog, the corn proving its existence by means of a red or yellow stain on the horn of the sole, which is often soft at the place where the trouble exists.

Treatment.—Apart from a natural desire to relieve his animal and remove his lameness, the owner of a horse that is

troubled by a corn should remember that, as there is often a quantity of matter at the seat of the injury below the discoloured horn, it is necessary to pare down the latter so that the pus can escape. Otherwise it will work its way upwards and may produce quittor, which often causes serious trouble. All corns, however, do not suppurate, and then it is unnecessary to pare away the horn so as to cause discomfort to the horse, but, after the shoe has been removed and the sole pared away, the place may be frequently bathed with warm water and poulticed so as to allay the inflammation and draw out any matter that exists. Very great attention should subsequently be paid to the shoeing, and if the frog can be allowed to come down to the ground, it may benefit the horse in some cases. (See *Quittor*.)

Coronet.—The part of the pastern immediately above the hoof. (See *Fore-legs, Hoofs*.)

Corrugated Iron is sometimes used as a roofing or for the sides of stables, but being a conductor of both heat and cold it is a very bad material for such purposes, even if a wooden inside lining is supplied. (See *Roofs*.)

Coughs are frequently the preliminary symptoms of serious illnesses, and hence the animal which is troubled with one should be carefully watched. Of course, a cough can often be accounted for by a particle of food going the wrong way; but if it is repeated, and is short and low, the soundness of the victim's wind may be suspected. On the other hand, a soft, loose cough is usually associated with a sore throat, and in such cases a little nursing, the application of some liniment, and a bran mash or two may put all right. A cough accompanied by a grunt is usually associated with roaring. (See *Broken Wind, Catarrh, Pneumonia, Prescriptions, Roaring, Sore Throat*.)

Counter Irritants.—A mild form of blister. (See *Blistering, Prescriptions*.)

Couplings.—A term applied to the body and loins of a horse, which couple his two ends together.

Courage.—A stout heart and generous disposition is an indispensable attribute of every working horse, as unless he possesses courage no animal will struggle on under difficulties, or get to the end of a long and trying journey in good style. Consequently a faint-hearted horse which declines to struggle when the pinch comes is as unsatisfactory as he is unreliable, and can never be depended upon to do his best, though occasionally he may surprise those who know him by a spasmodic display of pluck, which proves that he is a good horse when he chooses. Faint-heartedness undoubtedly runs in families, and hence the risk of breeding from a sire or dam which has displayed the white feather, as their stock are pretty certain to inherit the failing. No doubt the blood of a generous, stout-hearted thoroughbred is the best of all foundations for imparting courage, but, unfortunately, many blood-horses are not merely non-stayers, but pronounced cowards, and hence the absurdity of breeding from a thoroughbred sire simply because he happens to be good-looking, and the extreme desirability of enquiring closely into his antecedents and those of his family. It is a grand mistake, too, to regard the blood-horse as the only member of the equine race that is possessed of courage, for many a cart-horse and member of other breeds will struggle on under difficulties in a manner which could not be surpassed by any thoroughbred in the world. At the same time, beyond all doubt a stout-hearted thoroughbred is the best and gamest horse in existence. (See *Speed, Stayer.*)

Covert Hack.—As his name implies, the covert hack is an animal used for the purpose of conveying his owner to a meet of hounds. He should therefore be of a good riding type, with well-placed shoulders, sound legs and feet, and a good back and quarters. He ought, moreover, to be a nice, easy mover both at the trot and canter, but nothing in the

way of extravagant action is demanded of him, and he should be up to weight.

Cow Hocks—In-turned hocks, which cause the stifles and feet to turn outwards. This formation certainly detracts from the appearance of a horse, and reduces his propelling power; but there are cases of animals which have been slightly cow-hocked having shown great speed. (See *Hocks*.)

Cow-kick.—The forward kicks some horses give with their hind-legs are thus described. A cow-kick is a serious danger to any one mounting or standing beside the animal which indulges in the habit.

Cracked Heels may be described as severe chaps, the result of the hollow of the heels above the hoof and at the back of the pastern being insufficiently dried after becoming wet by water or mud.

Treatment.—Apply a dressing of zinc or some other healing ointment, and let as little water as possible get on the sore places. As a precautionary measure it is well to apply a little vaseline to the hollows above the heels before the horse goes out in cold weather.

Cradle.—A light framework, constructed to buckle round a horse's neck in such a manner as to prevent him bending it. A cradle is usually used after blistering, or when poulticing is going on, so that his teeth cannot reach the parts which irritate. (See *Blistering*.)

Cramped Action.—When a horse fails to move with freedom, his action is described as cramped. (See *Free Action, Liberty.*)

Crest.—(A) The upper part of the neck, the arch of which is usually strongly developed in stallions. If the crest feels hard to the touch, the horse is in good condition and health.

(B) See *Armorial Bearings.*

Crib-biting is a most objectionable form of vice for a horse to indulge in, as it is apt to produce inflammation of the bowels, flatulency, colic, and various ills to which the stomach is liable. The vice consists of swallowing air, which a horse succeeds in accomplishing by supporting his teeth

Crib-biting.

on the manger, rack chain, or any object which he can get hold of—in fact the fore-legs have been used for the purpose—and sucking in the air through his half-opened mouth. He will then attempt, usually successfully, to swallow the air, by bringing his chin towards his breast, and arching his neck, the operation being accompanied by a peculiar grunting sound which there is no mistaking. Probably the habit com-

mences by gnawing the edge of the manger during hours of idleness ; but there can be no doubt that one horse can, and very frequently does, teach the trick to his stable companions, and therefore suspected offenders should be kept by themselves. An animal whose front teeth are worn should be carefully watched, and if the sounds of the ominous grunting are heard in the stable, the horse which makes them should be removed from his companions before it is too late. All sorts of suggestions, such as a strap tightly buckled round the throat, have been made for the cure of crib-biting, but none can be relied upon as being absolutely efficacious, though the most successful plan is to dress the edge of the manger, the rack chain, and every projection within the reach of the horse's teeth with something that tastes objectionably. (See *Wind-sucking*.)

Cross-breeding.—Many practical men, and a still greater number of unpractical ones, devote a great deal of time to more or less successful experiments in crossing two established breeds of horses, with the idea of effecting improvements in one or both of them, or of producing some particular type of animal they desire to possess. In the hands of a scientific breeder, successful results may be obtained, as, for instance, in the hunter, which in the majority of cases is a half-bred horse ; but mixing up blood is a very dangerous thing for a man to attempt who has not studied horse-breeding in all its phases. This is owing in a great measure to the influence of back blood, as there is always a reasonable prospect of an animal throwing back to some remote ancestor, a fact which is by far too often lost sight of by those who experiment in crosses. Nor is there any sort of guarantee in making a cross that the good points of the parents will be apparent in their stock ; indeed, as many a breeder will have learned by experience, it is the bad ones which often appear. (See *Atavism, Back Blood, Breeding, Telegony*.)

Crossing Feet.—A horse whose fore-legs are faulty, and whose freedom of action is thereby impaired, is liable to cross his feet at any moment, as is a tired animal or one that is badly ridden or driven. By this is meant a horse which is suddenly pulled up with one rein loose or in such a manner that one limb lurches forward so that he loses control of it, and crosses his feet in such a manner that he stumbles. (See *Accidents, Broken Knees, Cuts.*)

Croup is the name given to the part of a horse's back which extends from the top of the loins to the root of the tail. (See *Conformation.*)

Crupper.—The crupper is the strap of which one end is buckled to the pad of a harness horse, or the saddle of a hack, whilst the other terminates in a thick, smooth, oval-shaped loop which passes under the tail. (See *Harness.*)

Crust of the Hoof is the hard outside covering of the walls.

Cuboid Bone.—A small bone at the back of the hock underneath the *os calcis*. (See *Bones, Hind-legs, Hocks.*)

Cunieform Bones.—Small, flat bones of the hocks and knees. (See *Bones, Hocks, Knees.*)

Curb Chain.—The chain which extends from cheek to cheek of the bridle, resting on the chin groove. Such chains are indispensable in the case of some horses, but they should never be linked up too tightly. (See *Bitting, Chin Groove.*)

Curbs are situated, when they are present, on the back of the legs, a couple of inches or so below the hocks, and can be easily detected when viewed from the side, as the leg, instead of being in a perfectly straight line from the hock to the fetlock, appears bowed to a greater or less

extent when a curb has been sprung. Sometimes only one hock is affected, and it is frequently the case that the horse does not go lame from curb, though the latter is included in the category of unsoundness. At the same time there is usually more or less heat, and sooner or later trouble is almost certain to arise.

Treatment.—Rest and hot fomentations frequently applied, cooling food, and, if necessary, blistering. Obstinate cases will have to be treated by firing, and when the horse resumes work a high-heeled shoe should be worn. Curb, it may be added, is undoubtedly a hereditary disease. (See *Blistering, Fomentations, Prescriptions.*)

Curb.

Curricie.—An old-fashioned, two-wheeled vehicle which is now very rarely seen. It was drawn by a pair of horses, the end of the pole being supported by a yoke which extended from the withers of one horse to those of the other.

Curry-comb.—A flat piece of metal to which several rows of bars with notched edges and a handle are attached. The curry-comb ought not to be applied to the coats of light breeds of horses as it is apt to irritate the skin and produce scurf, but should be used to scrape against the body brush in order to clean the latter when it becomes clogged with scurf and hair. (See *Body Brush, Grooming.*)

Cuts are of four varieties: namely, *incised*, which may be described as a clean cut, such as is caused by a knife drawn across the skin; *lacerated*, such as may result from something tearing the flesh; *punctured*, which are caused by something penetrating deeply, such as a stab or splinter; and *contused*, when they are connected with bruises.

Treatment.—The first thing to do is to stop the bleeding,

and to search for and extract any foreign substance that may be in the wound. The latter object can, excepting in severe cases, in which event professional assistance should be at once procured, be usually attained by dabbing the place with wet lint—a pocket-handkerchief will do in an emergency—or by letting water trickle down over the wound from above. If the cut is not a deep one all that may be necessary is to apply a mild antiseptic dressing, such as carbolic acid one part in forty parts of water, or carbolic acid in twenty-five parts of olive oil. Then three or four thicknesses of gauze may be laid over the cut, and on this again a layer of cotton wool, sterilised if it is procurable, all being kept in position by a bandage which can be made out of stockings cut lengthways and fastened together by safety-pins, if proper bandages are not at hand. In the case of deep cuts it may be necessary to apply stitches. Punctured cuts may have to be syringed out to cleanse them, as sometimes their recesses cannot be reached by other means, the best fluid to inject being carbolic acid one part and water twenty to thirty parts. Most cuts evince a disposition to fester before they heal, and if this is the case the bandages should be removed and means taken, by lancing if necessary, to enable the pus to escape. (See *Bleeding, Broken Knees, Cuts, Stitching Wounds.*)

Cutting.—See *Brushing, Speedy Cut.*

D

Daisy Cutting.—The term applied to the action of a horse which does not lift his fore-feet more than a few inches from the ground. (See *Free Action, Round Action.*)

Dale Pony.—(See *Fell Pony.*)

Damp Food.—Many owners advocate the principle of always giving their horses their allowance of grain, chaff, and

bran slightly damped, but upon the whole the practice is not to be commended as a general rule. It is a different matter, however, in the case of an animal whose wind is affected, for if his food is damped the particles of dust which are always more or less present do not irritate his throat and air passages as they would if his feed were a dry one. (See *Feeding*.)

Dandy Brush.—The moderately long-haired brush which is used in grooming horses.

Dartmoor Pony, undoubtedly, is one of the most ancient of all the existing breeds of British horse, his ancestors having roamed the famous Devonshire moor from time immemorial. Unfortunately, however, the purity of the breed has been sadly interfered with by injudicious crosses, which have been deliberately introduced with the intention of increasing the height of these ponies, which should not exceed a liberal 12 hands 2 inches, or at most 13 hands. There has also been a good deal of injury caused to the breed by the presence of many undesirable stallions on the moor whose stock cannot by any stretch of imagination be accepted as representing the qualities of the true Dartmoor pony.

The constitution and stamina of the breed are remarkable ; indeed there are few horses that could endure the hardships of a winter on the moor, and yet, excepting in exceptionally severe weather, the mortality amongst them is extremely low. This pony is also very sure-footed, and hence is equally valuable for work in saddle or harness. The head of the Dartmoor is a little inclined to be big for his inches, and it appears even more so than it really is, as the ears in this breed are very small ; the shoulders slope well, and as a rule the quarters are excellent, though there is a tendency amongst the ponies which have been a long time on the moor to be cow-hocked. This has been accounted for by the habit they have of standing together in a bunch with

their heads pointing inwards and their tails turned to the wind when the weather is particularly bad. The correct colours of the Dartmoor pony are brown, bay, and black. Chestnut and grey are not true colours, and may be regarded as a sure indication of impurity of breeding, whilst roans, piebalds, and skew-balds are never seen.

Dash-board.—See *Splash-board*.

Deafness is not so great a misfortune for a horse to possess as might at first be imagined, for although it prevents an animal from being guided by its rider's or driver's voice, it is often associated with great docility, deaf horses being usually very easily controlled by the rein.

Dealers must be regarded as a necessary evil of the horse world, the expression "evil" being applied to them owing to the fact that, unfortunately, a considerable number of their body ignore the fact that honesty is the best policy in business transactions. On the other hand, there are hundreds of horse dealers whose methods of carrying on their businesses are absolutely beyond reproach, and whose integrity is above suspicion. In the hands of such men the inexperienced buyer is safe, provided that he is sensible enough to understand that if he wants a perfect horse he must be prepared to pay for it. Many dealers are willing to buy horses for customers on commission provided a reasonable sum is paid them for their services, and when a man of good reputation and sound judgment undertakes such a duty, the money paid to him is usually well spent. As a rule the professional dealer who is not ashamed of his vocation and does not profess to be something that he is not, is a far more satisfactory individual to deal with than the amateur dealer who poses as being a superior class of tradesman and charges fancy prices accordingly. Above all, the man who habitually adds to his income by always having a friend who has "just the horse" the uninitiated

wants is to be regarded with suspicion, as he is usually unscrupulous and as often as not as bad a judge as his unfortunate client.

Debility.—When a horse is delicate by nature or is suffering from the effects of exhaustion it is necessary that his strength should be kept up by attention to his feeding and comfort. A shy feeder is usually more or less a victim of debility, and his appetite will require tempting. In all cases, however, it should be remembered that it is not a wise thing to place too much food at a time before a sick or debilitated horse. A few mouthfuls every now and then is quite enough to commence with, and it may be necessary to give him these from the hand without placing the food in the manger at all. (See *Prescriptions, Restoratives, Tonics.*)

Dentistry.—It is, of course, entirely beyond the power of a non-professional man to attend to his horse's teeth properly, but it cannot be too strongly impressed upon owners that it is necessary for the mouths of their animals to be examined from time to time. If this precaution is neglected, indigestion and other troubles may ensue, and a great deal of suffering be inflicted upon the horse. There can be very little doubt, too, that the tempers of some animals have been completely ruined, owing to the torments they have endured from decayed or broken teeth. (See *Age.*)

Depth of Body.—The place to measure this from is the centre of the back. (See *Depth of Chest.*)

Depth of Chest.—This can be measured by running a tape round the body from the withers in as direct a line as possible, and dividing the amount of inches by two.

Diabetes may result from improper feeding and indigestion, bad hay being often the cause, but the disease is happily not a common one in England.

Symptoms.—Frequent staling, accompanied by great thirst, bad breath, considerable costiveness, pale gums, and general debility, the pulse being usually very weak. Although the appetite is often good there is a loss of flesh, and the condition of the horse is obviously very bad.

Treatment.—A dose of aloes, two ounces of bi-carbonate of soda in the food, and plenty of water, hay tea, and linseed tea to drink. Both iodine and iodide of potassium have been successfully applied to severe cases, the doses being half a dram of the former and one dram of the latter every day; and it may be added that the iodine should not be given just before or after feeding time. Diabetes is, however, a disease that requires professional attention. (See *Hay Tea, Medicines.*)

Diaphragm.—A muscle attached to the spine and some of the ribs, which divides the portions of the interior containing the heart and lungs on one side, and the liver, kidneys, and intestines on the other. The action of the diaphragm controls the breathing.

Diarrhœa should be treated as soon as its existence is noticed, as if continuous an attack is certain to weaken the horse. It may arise from a sudden change of food or water, nervousness, eating some unwholesome food, or from the effects of poison, and if the latter is the suspected cause, professional assistance should at once be procured.

Treatment.—A reduction of the allowance of water, and dry food with no bran in it may suffice in a slight case, or an aperient medicine such as castor oil may be given. In more severe cases two ounces of tincture of opium may be given, with half an ounce of chalk, to a full-grown adult horse, or less in proportion. Rice water is better than plain water as a drink. (See *Prescriptions, Restoratives.*)

Dickey.—The seat behind a vehicle on which the servants sit. (See *Rumble.*)

Dipped Back.—A back is said to be dipped when it falls away into a hollow between the withers and croup. Horses possessed of this formation are more suitable for harness than for saddle work.

Dishing.—A horse is said to dish when he throws his fore-foot outwards when he lifts it off the ground, instead of moving it forward straight in front of him. (See *Action*.)

Disinfectants.—It is most necessary that the drains of stables, no matter how carefully they may have been laid, should be periodically disinfected, and besides this it is desirable that a reliable purifier should always be at hand in case of infectious diseases suddenly breaking out amongst the horses. A faint odour of carbolic or some such compound is also useful in a stable during the summer in keeping away flies which worry the horses, and hence another argument in favour of disinfectants, amongst the most useful of which are carbolic acid and chloride of lime.

Dishing.

Dislocations of the stifle or knee-cap occasionally occur amongst horses, but, excepting in the case of foals, a permanent cure is seldom accomplished, so there is little to do but to abandon hope. The reduction of a dislocation is,

however, at all times far beyond the powers of an amateur, and therefore a veterinary surgeon should at once be sent for, the part affected being kept as cool as possible by the application of cold swabs until his arrival.

Dismounting.—See *Riding*.

Distress.—The effects of overriding or overdriving a horse may easily lead to serious results, and under any circumstances, unless there is some vitally important object in view, it is folly as well as cruelty to work an animal until it drops. Occasionally, however, a horse does not show signs of distress until almost at his last gasp, when he suddenly staggers and sways about from exhaustion, sometimes falling to the ground in a heap. In such cases the bit should be taken out of his mouth, and all the tightly-buckled portions of his gear—such as girths, belly-band, throat latch—loosened; in fact he should be made as easy as possible. Should there be a breeze blowing, his head may be turned towards it, and his mouth, face, and poll should be bathed with cold water, whilst some spirits may be given him as a drench. (See *Restoratives*.)

Diuresis.—See *Staling*.

Diuretics.—When a horse displays a difficulty in passing his water, or the latter is passed in insufficient quantity, the following diuretic may be administered with satisfactory results. Resin 4 drams, soap 2 drams, oatmeal and treacle sufficient to make a ball. (See *Prescriptions*.)

Dock.—The fleshy part of the tail.

Docking.—Opinions are likely to continue to differ as regards the desirability or otherwise of docking horses. There can be little doubt, however, that the practice commends itself to a very large number of humane and practical

driving men, who recognise, often by experience, the danger that exists from a long tail getting over the reins or catching in some part of the harness. There is the minor annoyance also of an undocked tail which may be saturated with water or thickly coated with mud being drawn across a driver's face or a rider's clothes, and although it is admittedly possible for this difficulty to be got over by banging up the tail after the custom of ploughmen, there is no guarantee that the hair will be kept up in the case of a horse that is driven fast. One of the chief arguments held against docking is that it prevents a horse which is turned out to grass from ridding himself of flies. If, however, the length of an undocked tail which has been squared at the end, as presumably those of all horses which are used for work would be, is measured, it will be seen that the amount of body it can reach is extremely small, and, consequently, to be consistent those who entertain the opinion just referred to should oppose the hair of a tail being shortened at all.

The operation of docking consists of removing some of the end joints of the tail with a specially constructed knife, which is designed somewhat in the form of a pair of scissors. The way to proceed is to tie a tape securely just above the joint which is to be cut through, in such a manner as to stop the flow of blood, but not tighter than is necessary to do so. The part to be removed is then cut off with the docking knife and the hair brought down and tied below the wound. In twenty-four hours both of the ligatures may be removed, when it will be found that the wound has dried sufficiently to prevent a flow of blood unless some injury befalls it. Some operators cauterise the wound, but this is usually unnecessary. Docking is an operation which should be entrusted to a professional man.

Dog-cart.—This name was given to any cart with a deep body used for going to meets. The body was built spacious enough to carry the dogs, and from this use the name of dog-cart originated, but the word dog-cart is now

applied to any two-wheel vehicle partaking of the dog-cart shape.

Doors.—All the doors of a stable should be so constructed as to lie back close to the wall when opened to their fullest extent in order that there may be no projections for a horse to injure himself against. For the same reason all the bolts, locks, and other fittings should be sunk in the wood-work. It is best, too, to have the outside doors of stables and isolated boxes made in two parts, so that the lower half can be kept closed when the upper is opened to admit air, as by this means a horse which may get loose cannot get away.

Doping.—An American expression, applied generally to the treatment of horses' infirmities with the object of producing temporary relief. The practice of administering drugs to race-horses in order to enable a notoriously unsound animal to win races was introduced into this country a few years ago, but the effects, successful though they were from the dopers' point of view, were so obviously detrimental to the best interests of the Turf that the Jockey Club most wisely stepped in and prohibited the practice.

The objects of doping being opposed to honesty for the most part, no good end would be furthered by publishing details of operations which are admittedly illegal. It may be mentioned, however, that the application of ether and menthol to the legs is a favourite dope for lameness, and traces of these may therefore be sought for when the soundness of an animal is doubted. The old-time practice of giving a horse a dose of port wine or spirits before he starts for a race is now included in the category of dopes which are prohibited by the Jockey Club, but it is still carried out by some exhibitors of faint-hearted show-horses; whether it should be permitted is quite another matter.

Draft.—The term applied to a collection of horses which are disposed of out of a stable.

Drag.—(A) A term applied to a park coach. (See *Coach*.)

(B) The skid which is applied as a check to the hind wheels when going down-hill.

Drag Hunt.—When an artificial trail is laid over a country for hounds to follow it is called a drag, the term doubtless originating from the practice of dragging the object producing the scent along the ground.

Drains.—The draining of a stable is a far more important subject than a great many horse owners appear to imagine, if the condition of their premises is to be accepted as any criterion of their ideas. To accomplish what is required it is necessary that there should be a shallow groove behind the stalls to carry away the moisture, or, what is far better, there should be a small grating in the centre and back of each stall communicating with an underground channel which conveys the water to the outside of the building. These gratings should be cemented into the flooring, or so fixed that there can be no chance of their opening and injuring the horse's legs, and those behind the stalls may be placed opposite the pillars of the stalls, whilst in the case of boxes they should be in the centre. There should be a very gentle slope of the flooring towards the gratings, the old practice of arranging the floors upon a principle which placed the fore-legs of a horse standing in a stall upon a much higher level than the hind ones being distinctly bad, as it placed an unnecessary strain upon the limbs. The surface grooves behind the stalls, or the channel underneath the drains, should possess a slope in order that all fluids should run off quickly, and should be connected by means of a pipe passing through one of the walls with the sewer or cesspool outside. It will add considerably to the salubrity of the stable if the fluid running out of the latter falls into an outside gutter connected with the sewer or cesspool, as this arrangement entirely prevents any noxious exhalations

from entering the stable ; and it may be added that under any circumstances the cesspool, if there is one, should be removed a considerable distance from the buildings and that the pipes should be effectually trapped. In some primitive establishments the fluid from the stables is carried no further than an adjoining strawyard, where it is allowed to mingle with the litter strewed about, to the immense prejudice of the horse's health. When the bedding of the horses is composed of moss, sawdust, or such substances which absorb the moisture, the drains of the stable must be covered over, else they will become choked.

Draught Horse.—A horse that is used for draught purposes. In this country by the term "Heavy Harness Horse" a cart-horse is described ; and by "Light Harness Horse" a brougham, landau, or coach-horse. In America the latter breeds are included in the category of "Heavy Harness Horses," the prefix "Light" being reserved for the trotter only.

Draughts are a very constant source of ill amongst horses, owing not merely to the thoughtlessness of servants who allow heated animals to stand about in icy cold currents of air, but to the confusion which exists in some minds between providing horses with a sufficiency of fresh air and exposing them to draughts. The manner in which some stables are constructed renders them little better than caves of the winds which penetrate the crevices and beat upon the horses from every quarter. It is no wonder, therefore, that so many animals become affected in their wind, or lose their lives from attacks which are perfectly avoidable. (See *Air, Cold, Ventilation*.)

Drawing Knife.—The two-handled knife used by shoeing smiths to pare away the horn of the sole of a horse's hoof. The abuse of the use of this instrument has proved the ruin of many a valuable horse, whose feet have been spoilt

DRENCHES—DRIVING

by the drawing knife having been improperly applied to the frogs and bars. (See *Shoeing*.)

Drenches.—The term applied to fluid medicines.

Drenching.—The act of administering liquid medicines. (See *Administering Physic*.)

Drenching Horn.—The horn or horn-shaped vessel used for the purposes of administering drenches.

Dressing.—See *Grooming, Heated Horses*.

Driving.—In all cases, no matter how much confidence a master may repose in his groom or coachman, he should satisfy himself that the harness is all right and every strap properly buckled before he takes his seat. He should always mount from the off side, with his reins in his right hand, but

The way to hold the reins.

(Single horse or pair.)

(Tandem or four-horse team.)

they should be changed to the left as soon as he sits down, which ought to be at once. No matter how many horses a man may be driving, he must always sit well up, with his elbows close to his sides and his eyes fixed on his horses. Nothing looks much worse than to see a coachman perpetually staring about him, unless it be some of the grotesque poses adopted by certain of the drivers who appear at shows

to the astonishment of the spectators and discomfort of the horses they have in charge.

The methods of holding the reins naturally vary according to the number of horses which are being driven, the following arrangements being the correct ones. In the case of single horses or pairs the near rein is placed between the thumb and fore-finger and the off rein between the second and third fingers; whilst in tandem and four-horse driving the near leader's rein passes between the thumb and fore-finger, the off leader's and the near wheeler's reins between the first and second fingers, and the off wheeler's between the third and fourth fingers. The reins in all cases should be grasped firmly and placed low down on the fingers near the palms of the hand. The whip should always be carried between the thumb and first finger of the right hand so as to leave the fingers at liberty to assist the left ones in manipulating the reins, and the left hand holding the reins should be about 4 inches in front of the pit of the driver's stomach, with the right hand in turn in front of it, the wrists straight, and elbows close to the sides. The body should be straight, the head well held up, and the legs kept almost touching, with the feet on a properly constructed foot-rest, which is far preferable to a bar for the purpose, as the latter is liable to cause accidents by the feet catching in it.

In the case of pairs it is necessary to see that the traces and coupling reins are of the proper length, but the latter can always be adjusted by taking them up or letting them out a hole or two after a start has been made; and this is often necessary when strange horses are being driven, as one of them may require more liberty for his head than the other. In harnessing, the first thing to do is to secure the horses to the pole by the pole chains or pole pieces, then the outside traces should be fixed in position, and after that the inner ones, the pole chains or pole pieces being subsequently tightened as may be necessary to bring the horses near enough, but not too close, to the head of the pole. When reins require to be shortened, the correct way

to proceed is to take hold of them by the right hand in front of the left and to push them back the required distance through the fingers of the left. Shortening reins by pulling them through the left fingers from behind may be equally effective, but it is not artistic, and as the thumb has to be used in doing so the hold upon the whip is interfered with. At the same time, in driving four horses it is often correct to shorten the reins from behind by pulling, but the principles of team driving, which include many intricate movements of the hands, can never be acquired excepting by a course of proper tuition from a practical coachman, amateur, or professional.

Regarding the less ambitious turn-out, it may be observed that the unfortunately not very uncommon fault of jaggging at a horse's mouth in order to correct him or with the idea of causing him to increase his pace is most objectionable. A little gentle movement of the hands will usually accomplish all that is required in the latter matter, and the whip is the proper instrument to chastise him with, but it is seldom necessary to use it much or severely. A man who makes unmerciful, or even very severe use of his whip, is usually a bad coachman or a passionate man, who, either in ignorance or otherwise, vents his own shortcomings upon his horse, which will do far more for a driver who treats him firmly but without violence, and who keeps him under control by gentle words and pressure upon his mouth, instead of by violent threats and jaggging at the bit. (See *Bits, Harness, Mouth.*)

Drooping Quarters.—This term speaks for itself, being applied to quarters which, instead of being level as they should be, fall away behind the croup, the result being a low-set tail. (See *Goose Rump.*)

Dust Balls.—See *Calculus.*

E

Ear.—The ears of a well-bred horse should be small, fine, and rather pointed at the tip, a coarse, round tipped ear being regarded as a sign of bad breeding. They should be set on fairly high but not too close together, and carried erect; nervous horses and those of defective sight often keep on moving their ears about restlessly, whilst deaf ones usually carry them pointed forwards. The insides of the ears should not have the hairs removed when the horse is singed, as these are protections against the entrance of foreign substances and insects. (See *Lop Ears*.)

Ear Marks.—It is a common practice amongst the owners of horses which run on common land to mark the ears of their foals for the purposes of subsequent identification. Disfiguring notches on the outside edges are objectionable, as they affect the value of the horse in after life, and the best course to adopt, therefore, is to punch a hole in the ear and draw a few pieces of coloured worsted through it. (See *Branding, Markings*.)

Eastern Blood has undoubtedly accomplished much for the British horse, the Thoroughbred, Hackney, and other breeds having undoubtedly sprung from the horses which were imported from the East into this country by successive English sovereigns, King John being the first to recognise the value of this blood. James I. owned a horse called the Markham Arabian, and Charles II. gave evidences of the possession of sound judgment by importing a number of valuable mares; but the three great pillars of the Stud Book undoubtedly are the Byerley Turk, who flourished at the time of William and Mary, the Darley Arabian of Queen Anne's days, and the Godolphin Arabian, who accomplished great things in the reign of George II. (See *Arab, Royal Mares, Thoroughbred*.)

EAST FRIESLAND MARE.

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East Friesland Horses.—The East Friesland horse-producing district extends from Oldenburg on the east to Holland on the west, and from Osnabruch on the south to the North Sea. The welfare of this breed is entrusted to a very powerful society, called the Agricultural Head Association of East Friesland, which officially inspects all three-year-old stallions each spring, and all adults in early autumn, while none but horses passed by the society as sound may leave the district. The type now bred produces a very serviceable and powerful, upstanding, bay-coloured harness horse. Brood mares are submitted to a most searching examination before they are entered in the Stud Book, a rule to which the prosperity of the breed may be largely attributed, whilst the custom of giving valuable prizes to the owner of the mare from which at least two foals suitable for registration are obtained, and of carefully selecting all stallions for the district, is also to be commended.

Eating Beds.—A most objectionable, though by no means uncommon practice, which even muzzling will not prevent in confirmed offenders. The most common course to pursue is to substitute moss or sawdust for straw as bedding; but some horses will even eat moss, and many owners dislike the appearance of sawdust for a bed. A few drops of paraffin sprinkled on the straw, and then forking it well over, has been found to be a deterrent in the case of bed-eaters.

Muzzle for
Bed-eaters.

Eel Mark.—The dark line or list which runs along the back of some horses from the withers to the root of the tail. (See *Cleveland Bay*.)

Eild.—See *Yeld*.

Elbow.—The upper joint of the fore-leg. (See *Fore-legs*.)

Elliptic Spring.—This was invented by a coach-builder

named Elliot, who carried on business in the Lambeth Road, and was patented by him in 1804. It revolutionised the art of carriage-building more than any development which had gone before or has happened since. It is composed of laminated steel plates in the elliptical form, and is in such general use that it requires no further explanation here. Previous to this invention it was only possible to make heavy perch carriages. Its introduction, however, gave unlimited scope for the ingenuity of the trade, and the result is the vast number of light four- and two-wheel vehicles which constitute the present means of locomotion, both for private and commercial vehicles. (See *Perch*.)

Embrocation.—See *Liniments*.

Emetics are thrown away on horses for they are usually unable to vomit; consequently emetics only produce nausea.

Enemas are the large syringes with nozzles of 12 inches long and capable of holding a quart or more of fluid, which are used for injecting either plain warm water or a prescribed mixture into the bowels of a horse in cases of constipation, fever, or inflammation. About $2\frac{1}{2}$ quarts of fluid is the amount required for a full-sized animal, and it should be of about 100 degrees temperature. One of the patient's feet should be held up, and then the nozzle of the enema, which should previously have been coated with oil or grease, gently inserted into the rectum and pushed well up before the fluid is discharged into the intestines. (See *Injections*.)

Enlargements of the bone are chiefly found amongst horses which are raised on soft, marshy lands, and hence are more common amongst Shires than most of the other British breeds. (See *Ring-bone*, *Side Bones*.)

Enteritis.—See *Inflammation of the Bowels*.

Enzootic Diseases are those which attack a number of horses in the same neighbourhood from local causes. (See *Epizootic*, *Sporadic*.)

Epiglottis.—The epiglottis is a small valve which prevents food and water from entering the larynx, or organ of voice. (See *Larynx*.)

Epilepsy is the result of the brain and spinal column being in a disordered state, and invariably attacks its victims suddenly, which adds to the seriousness of the seizure. The horse's body and limbs become convulsed, and when he falls his struggles are piteous to witness, and oftentimes dangerous to those within his reach. Should his tongue get between his teeth he bites it badly, and the sounds he emits are sometimes heartrending.

Treatment.—There is no cure for epilepsy, but temporary relief may be ensured to the sufferer by dashing cold water over his head. A plain but sufficient course of feeding and attention to the state of his bowels may assist in deferring a subsequent attack, but a horse subject to epileptic seizures is a source of danger to those who use him.

Epizootic.—A disease is described as epizootic when it is one which spreads over a district; the term, in fact, is similar to epidemic, as applied to human diseases. (See *Enzootic*, *Sporadic*.)

Epizootic Lymphangitis is a totally different disease from lymphangitis or Monday Morning Evil, being more of the nature of glanders. It came into England at the time of the Boer War, and, being very contagious, is a notifiable disease.

Symptoms.—Nodules, which must not be identified with farcy-buds, form on the neck and shoulders, and, bursting, discharge offensive pus.

Treatment.—Dress with perchloride of mercury, or apply hot irons in severe cases; give 6 grains perchloride of mercury in 1 pint of salt and water once daily, or in bad cases twice.

Ergot is one of the fungi which attacks grass, and if eaten by an in-foal mare is likely to produce abortion. The flowering head of the grass is its usual seat, and is so frequently met with in rye that the two have come to be associated with each other, but all large seeded grasses are attacked by ergot. It appears in the late summer and early autumn, and no in-foal mares should be turned out on any pasture where its existence is suspected. Ergot eaten in large quantities produces poisonous effects, such as severe colicky pains, purging, and breaking out on the lips. The animal subsequently falls into a comatose state, and as a rule paralysis sets in, the hind-quarters being generally the first part attacked.

Escutcheon.—The division of hair which begins below the point of the hips and extends downwards on the flanks.

Evolution of the Horse. — The present-day horse is generally supposed by Darwin and other noted scientists to be descended from an animal no larger than a fox, christened by Professor Owen "the hyracotherium," which existed in the Eocene period, about 3,300,000 years ago. At all events fossils found in Devonshire, America, and elsewhere show that a true horse, more akin to ours in size, certainly inhabited the world in the Great Ice Age before the present oceanic divisions acted as barriers. The first horses of which traces remain were the five-toed Eocene species that developed into a three-toed race most probably dun-coloured. Three million years elapsed, during the latter part of which man hunted horses for food, until in the Neolithic, or Newer Stone Age, attempts appear to have been made to domesticate them, though it is thought that they were corralled for reserve food before this period; they were by this time about 13 hands in height. At first they were used by the Solutrians—who occupied a tract of land on the Soane, to the north of Lyons in France—as pack-horses, and no attempt was made to breed from them. Interesting

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EVOLUTION OF THE HORSE

carvings dating from a little before this time show horses wearing nose-bands and strong cords, and in one case in what appears to be a decorated quarter-sheet.

The first references to the horse in literature are in the

Bible, allusions to him in Genesis and Exodus being numerous; while Job also alludes to horses from Uz and Arabia. The Romans, Jews, and Greeks used horses chiefly for war, the former of whom prized those obtained from Britain. Racing is known to have been practised by the ancient Greeks in B.C. 600.

In England King John, Henry VIII., and James I. would seem to have done much to encourage horse-breeding by importing stallions from Flanders, Spain, and Arabia. Henry VIII. took vigorous measures to stop the export of any animal worth more than 6s. 8d., or over a given stature. The present-day laxity in this respect is regrettable, and will inevitably lead to a diminution in the standard of quality in horse-flesh, for which England has so long been famous. (See *Size*.)

Ewe Neck.—A neck which bears no crest and is inclined to be concave on the top.

Exercise.—Unless regularly exercised no horse will keep in health, and it may be added that some animals require a great deal more than others if their condition is to be maintained. These facts are, however, very often forgotten by owners and ignored by servants, who object to the trouble incurred by exercising horses which are not in work, the result being, amongst other things, filled legs. Carriage horses which are left behind by their masters when the family is away from home are frequently the victims of a servant's neglect of duty, a circumstance which it is well for their owners to bear in mind. It is not necessary to give an animal a great deal of fast work in the earlier stages of getting him fit, as long, slow, gentle exercise strengthens the tendons and lays on muscle, whilst faster movements assist in clearing the wind. Consequently, the value of slow exercise gradually increasing in length cannot be too forcibly impressed upon the minds of those who have horses under their care.

Exhaustion.—The temporary effects of overwork or overloading can usually be counteracted by making the horse comfortable. When he comes in he should be carefully dressed over—this need not be overdone if he is in a very exhausted state—his ears pulled, legs rubbed,

face sponged, and his body lightly gone over. If he stales and shakes himself, he will be pretty sure to be all right soon, even though he may be stiff and sore. A bran mash is the best thing for him on such occasions, and he may be also given a little long hay to pick over; whilst his bed should be comfortable, and he should be left as quiet as possible so that he may rest. If he does not fancy a mash, or if it is a case in which he appears to be likely to collapse, he may be prevailed to take some bread and beer, or may be drenched with eggs and brandy, or some other stimulant. (See *Heated Horses, Restoratives.*)

Exmoor Pony.—There can be no doubt that much benefit accrued to the Exmoor pony from the writings of Whyte Melville, whose book “Katerfelto” has been read with pleasure by many thousands of readers. That there was such a pony as Katerfelto there can be no grounds for doubting, and it is equally certain that he left his mark upon the breed which his presence on the North Devonshire moor so greatly benefited. It is surprising, therefore, in the face of the almost superstitious reverence which attaches to his memory, that nothing is positively known regarding the antecedents of Katerfelto, who is popularly believed to have been a survivor of a wreck on the Devonshire coast who found his way on to Exmoor. He is generally believed to have been dun in colour, and as such, to have been responsible for the dun ponies now to be found on the moor, of which no mention was made previous to his appearance on the scene.

Still, had there been no such pony as Katerfelto it is quite certain that the ancient and beautiful breed which in the old days flourished in the neighbourhood round Simonds-bath would have been a valued variety of British horse. No day is too long for an Exmoor, and it might almost be added no weight is too heavy for him to carry, as those who have seen them following the Devon and Somerset stag-hounds will readily admit. He shows more

quality than the more homely-looking Dartmoor, but, excellent though his constitution is, the Exmoor cannot thrive upon the southern moor, as the winters there are too much for him. He is a sweet headed, powerfully built, good shouldered little horse and admirably adapted for riding purposes; his best colours being bay and brown, often with tan noses, whilst duns are also met with and valued. Like the Dartmoor, the Exmoor has been the victim of many crosses, the object of which was to increase his size; hence the appearance of chestnuts and greys, which are not natural colours of the breed. (See *Dartmoor Pony*.)

Exposure.—Although horses can stand cold well, provided they are either clothed or have their full coats on them, they are peculiarly susceptible of draughts, especially when heated. At the same time, no one in his senses would expose any animal to cold or wet weather unnecessarily, and hence in the case of horses which are being worked it is unadvisable to allow them to stand about too long a time. (See *Cold, Draughts, Turning-out, Ventilation*.)

Extravagant Action.—A term applied to the very high knee and hock action of the hackney. (See *Action, Free Action, Hackney, Harness Horse, Round Action*.)

Eyes.—Too much importance cannot be attached to the soundness of a horse's sight, and daily serious accidents occur through the neglect by owners to satisfy themselves on this point. When his eyes are being examined the horse should stand neither in too much light nor in a dark corner. Just inside the stable door and facing the light is a good position to place him in, and care should be taken to avoid the reflection of scenes outside being thrown upon the pupils. The latter should be absolutely transparent, any trace of cloudiness, puckering, or thickness of the lids, and, above all, the least sign of a speck upon the sight, when viewed

either from below or behind, being regarded with suspicion as a proof of inflammation either past or present. In cases of trouble from the effects of a blow the horse should be placed in a darkened box or stall, and warm fomentations must be applied to the injury in order to reduce the pain and inflammation. Should there be tenderness it is best not to touch the part with the sponge but to squeeze the water out of it from above the wound so that it can run over the sore place. If the eyelid is cut the wound may require to be stitched up, but this is a delicate operation and is best left to a professional man, as horses are peculiarly averse to having their eyes touched. (See *Cataract, Iris, Ophthalmia, Pupil.*)

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Face.—The front of the horse's head which extends from the forehead to the muzzle.

Fainting.—Sometimes, though not often, a horse will faint from the effects of overwork or general weakness. If so there can be no confusing the symptoms with those of epilepsy or megrims, as the animal lies perfectly still, and there is no preliminary shaking of the head. If the tongue is drawn out it will not be re-drawn, the horse lying perfectly still, whilst his pulse is very faint and slow.

Treatment.—Rinse out the mouth with cold water, and allow the head to hang down lower than the body if it can be managed. Remove the harness, and chafe the legs and ears so as to promote circulation. As soon as he can swallow, half a quartern of whisky or some other spirit may be administered, and afterwards if he wishes to drink he may be allowed to do so.

Faking.—The improper tampering with some part of a horse in order to conceal some fault or fraudulently improve his appearance. (See *Beaning, Bishopping.*)

Falls.—When a horse falls, unless it is due to a sudden attack of illness, the accident is usually due to the carelessness of the person in charge, or bad shoeing. In any event, the driver should dismount and assist the animal to regain his feet, removing such parts of the harness as may be necessary and wheeling the vehicle out of the way. Should the horse struggle, he must, of course, be restrained, but it is quite unnecessary to adopt the primitive custom of employing some one to sit on his head. If the rein on the side furthest from the ground be pulled tight so that his head comes round and the cheek nearly rests upon his shoulder the horse will be quite unable to regain his feet. (See *Broken Knees, Cuts.*)

False Nostrils.—The small pouches formed inside the true nostrils by the folding over of the skin on the top of the air passages.

False Quarter is, fortunately, not a very common trouble, as it is a serious one and not at all easy to cure. It is the result of inflammation of the coronet, which affects the horn of the hoof and causes a separation of the crust. The existence of false quarter can be detected by tapping the sides of the feet, as in cases where they are affected a hollow sound is given out. Lameness is certain to appear sooner or later, and a rest, accompanied by cooling medicine and food, may reduce the inflammation, but no permanent results can be obtained unless the horn of the foot over the cavity which has been formed inside is cut away and new horn encouraged to replace it. After the horn is cut away the coronet may be blistered and the cavity may be stopped by the application of tow steeped in Stockholm tar. (See *Blistering, Prescriptions.*)

Fan-tail.—The tail of a docked horse which is not squared, but cut shorter at the sides near the root, so that it presents the appearance of a fan.

Farcy is allied to that terrible scourge of the horse world, glanders, but appears in a different form, and it is possible for an animal to suffer from both diseases simultaneously. *The symptoms* of farcy are a high temperature, accompanied by a swelling of the hind-legs inside the thighs, and the appearance of several small but very painful and hard swellings on these parts, and sometimes on the body and neck as well. These swellings, or buds, break in course of time and discharge purulent pus, but show no signs of healing. Nor should time be allowed to them to do so, as farcy is an incurable and highly contagious disease, and the victims of it should at once be destroyed and their bodies either burned or buried in quicklime. A horse suspected of having contracted this disease should be most rigorously isolated until a confident opinion can be formed. (See *Glanders*.)

Farrier.—In days gone by the farrier, in addition to attending to the shoeing of a horse, was in the habit of treating him medically if called upon to do so; indeed, as a matter of fact, horse doctors were generally known as farriers. In modern times, happily for both horses and their owners, the number of properly qualified veterinary surgeons has so largely increased that the farrier is relegated to his proper position. (See *Shoes, Shoeing Smith*.)

Fat, like charity, covers a multitude of faults, and hence it is a common practice amongst exhibitors and dealers to overload their animals with a burden of superfluous adipose tissue, which gives them a rotund appearance, and often conceals a blemish. A horse which is fat is always overworked at a risk of having his wind broken, and naturally is at a disadvantage with animals in proper condition. A course of purging medicine, plenty of work, at not too fast a pace, and a sufficient, but not too large allowance of sound grain and chaff, with a little long hay, is the treatment which should be resorted to to reduce fat. (See *Exercise, Feeding*.)

Feather.—See *Hair*.

Feather-edged Shoe.—A shoe, one side of which is thinner than the other. Some people recommend these for horses which brush or cut themselves, but they are not good shoes to use, as they bring the foot off the level and cause strain upon the muscles. (See *Shoes*.)

Febrifuge.—A medicine which reduces fever, such as ammonia or nitre. (See *Medicines, Prescriptions*.)

Feeding.—The proper feeding of their horses should be an important consideration for owners, as upon the correctness of the system adopted the health and utility of the animals will largely depend. Unfortunately, however, in horses, as in mankind, individual animals differ widely in constitution, and hence the difficulty that exists in applying a general rule that will meet all cases. It may, nevertheless, be laid down that the staple foods for healthy horses in work are grain, hay, chaff, bran, roots, and green meat, such as grass, tares, vetches, or sanfoin. Regarding the corn, there can be no doubt that oats form the best form of food, though maize or Indian corn is used largely in some stables, partly from motives of economy and partly because it is more fattening and so makes some naturally light-fleshed horses look better. Long hay is not to be recommended for general use, as the horses pull it out of their racks and waste it, and therefore it is best given in the form of chaff with the corn. This arrangement is all the more desirable as it prevents a greedy horse from bolting his corn without masticating it properly, in which case some of it will pass through him undigested and without doing him any good. Bran is useful as a mild form of laxative, and is often mixed with the corn and chaff; whilst sliced roots and green food are useful in the summer for keeping the blood cool.

Without attempting to enter into any scientific details regarding the nutritive properties of the various forms of

grain and other foods, it may be pointed out that some are far more nourishing than others, and that the quality of each varies very considerably. The amount, too, that a horse should get must depend, not merely upon his size, but upon the amount and nature of the work he is doing and the season of the year, but in all cases the quantity he gets *per diem* should be divided between at least three and, better still, four and even five feeds a day. This is because the horse's stomach is extremely small for his size, and consequently requires to be filled at frequent intervals. A horse doing fast work upon the roads or a hunter during the season will require more food and a larger proportion of corn than he does when he is taking matters easily, and under any circumstances the question of cleanliness must be carefully studied, for horses detest soiled food, and their health suffers from dusty oats and mouldy hay. It may be mentioned, too, that a sudden change of diet is apt to upset a horse, and therefore such matters should be arranged gradually.

Regarding the quantity allowed each horse *per diem*, whilst it may be repeated that some animals will require more than others, the following scales may be suggested as a general guide, but they can be increased or diminished as circumstances demand. Harness horses, 10 lbs. of corn and 12 of hay or chaff; hunters in hard work, 16 lbs. of corn and 10 lbs. of hay or chaff, with occasionally a couple of pounds of beans in lieu of a similar weight of oats; light vanners in heavy work, oats 7 lbs., maize 7 lbs., beans 1 lb., chaff 12 lbs.; heavy street horses, oats 10 lbs., maize 4 lbs., beans 5 lbs., hay 16 lbs. If desired, a little bran may be added to the above, whilst it may be mentioned that beans (or peas) are not approved of by all owners. Sliced roots and linseed or oat meal are also frequently given to heavy horses, the other forms of food being proportionately reduced; and a small allowance of roots may be supplied to the lighter breeds when not in very hard work with satisfactory results. A bran mash will do good, if substituted one night a week before the horses' resting-day for the last feed, and

an armful of long hay may be placed in the racks when the horses are bedded up for the night, as it will assist them in passing the time away. (See *Barley, Beans, Bran, Carrots, Chaff, Chop, Forage, Hay, Maize, Oats, Peas, Wheat, and Water.*)

Felloe.—The outside wooden rim of the wheel into which the spokes are fixed. (See *Axle, Nave, Spokes, Tyre.*)

Fell Pony.—A breed of ponies has been associated with the counties of Cumberland and Westmoreland for centuries past, and no doubt the race in days gone by was improved by crosses from across the border. The height of these ponies ranges from 12 hands to about 13 hands 2 inches, or a little over, and the most common colours are bay, brown, and black, grey being rare and chestnut unknown amongst them, whilst white markings, unless they take the form of a small star on the forehead, are regarded as a sign of impurity of blood. The head of the Fell Pony is neat, the ears small, and the neck of a nice length, whilst the shoulders are excellent. A very good back and powerful level quarters are also characteristics of these ponies, and they also show a good deal of bone below the knee. The larger ones are excellent riding ponies, and, speaking generally, they are possessed of very robust constitutions.

Femur.—The thigh bone which extends from the hip joint to the stifle. (See *Hind-legs.*)

Fetlock is the joint which connects the cannon bone with the pastern. (See *Fore-legs.*)

Fever in the Feet.—See *Laminitis.*

Fever Rings appear in the form of a succession of ridges on the outside of the hoofs of most horses which have suffered from founder or inflammation of the feet, and hence any

animal which carries such traces of previous trouble should be carefully examined. It may be added that unscrupulous persons frequently attempt to remove the traces of fever rings by rasping the walls of the hoof, thereby inflicting additional injury upon the horse. (See *Laminitis*.)

Fevers are, of course, associated with most diseases of which horses are the victims, and their existence can always be detected by the use of the clinical thermometer should the attendant's sense of touch and the appearance of the animal not be convincing. In cases where a fever is the precursor of illness more serious, the patient must be watched in order that his ailment may be diagnosed, but should nothing transpire to account for the rise in temperature and increased pulsation a dose of aconite 15 minims in half a pint of water may be administered with satisfactory results. If, on the other hand, there is reason for believing that the patient is suffering from the effects of over-feeding or want of exercise, his corn and chaff should be knocked off, and he should be placed on a diet of mashes and green food for a few days, and a dose of 4 drams of aloes in the case of a full-sized horse may be administered. (See *Prescriptions*.)

Fibula.—The bone of the back leg, situated below the stifle joint and extending to the hock. (See *Bones, Hind-legs*.)

Fidding.—A discreditable practice which is employed by some owners of horses and their servants with the object of making a mare carry her tail higher. It consists of applying ginger, and occasionally cayenne pepper, to the organ of sex, and constitutes an act of cruelty which no proper minded person could be expected to tolerate. (See *Gingering*.)

Fighting Action.—A horse is said to fight in his action when he raises his fore-legs off the ground to a considerable height, but does not use his shoulders as he should or extend

his knees sufficiently, the result being that he covers very little ground. (See *Action*.)

Filled Legs are usually caused by over-feeding, or the want of exercise, the limbs swelling suddenly and becoming very tender and stiff. Young horses, and those which are run down by overwork, are peculiarly liable to this form of trouble.

Treatment.—A diuretic and gentle exercise will usually effect relief. (See *Diuretics*, *Monday Morning Evil*.)

Fillet String.—The ornamental cord which passes behind the thighs about midway between the tail and the hocks to connect the two sides of the quarter-piece. (See *Clothing*.)

Filly.—A young maiden mare, the term usually being applied to such until she is a four-year-old.

Finnish Horses.—(See *Swedish Horses*.)

Firing is an operation which may be successfully conducted as a means of strengthening back tendons, or in the treatment of spavin, in addition to which some owners, particularly hunting men, have their horses fired as a precautionary measure in the hope of preventing a break-down from one of the above causes, whilst others prefer to adopt the milder treatment of blistering, but the operation should be left to a professional man to carry out. In the face of this assertion it may appear unnecessary to point out that the irons are often applied with unnecessary severity. Excepting in very extreme and rare cases there is nothing to be gained by inflicting gratuitous punishment on the horse by deep-firing. If the lines are regular, about half or three quarters of an inch apart, and not unnecessarily deep, the object of the operation will have been achieved and the horse's appearance will not be affected more than is absolutely necessary. Puncture firing, if properly carried

out, leaves very little trace behind it, but cross lines or diamond firing invariably leave ugly marks, owing to the scabs sloughing off in flakes. As it is the practice of some owners to fire their horses as a precautionary measure, this operation must not invariably be regarded as a proof of the animal having broken down. (See *Back Tendon, Spavin.*)

Flank is the part of the body situated behind the ribs and below the loins, extending down to the belly.

Flap.—The flap of a saddle is the outside part which extends from the skirt and seat to the lowest extremity above the stirrups. (See *Saddle, Seat, Skirt.*)

Flat Foot.—A flat foot is one that is low at the heel, and is usually associated with a large, soft frog and brittle horn. Horses bred on damp soil are more commonly flat-footed than those raised on other land. (See *Foot.*)

Flat-footed.—A horse is said to go flat-footed when, owing to the lowness of the walls of his hoofs, he goes upon his heels more than on the toes, instead of putting his feet squarely and evenly on the ground.

Flat Sides.—When a horse's ribs are not rounded as they should be, he is described as flat-sided. The formation is an objectionable one, as owing to the ribs not being convex there is a reduction of space for the heart and lungs to work in.

Flatulence, or Wind, is generally caused by indigestion.

Treatment. — First give a purge to clear away any internal obstructions, and then give small doses of bicarbonate of soda twice a day for a week. Avoid beans or peas as food. (See also *Indigestion.*)

Flexing the Hocks is a term which explains itself; it

is usually applied to hackney action, as this horse bends his hocks more than most breeds do, and gets them further under his belly. (See *Action*.)

Flexor Muscles of the foot are those which bend the fetlock and pastern and joints. They connect with the back tendons above the knee. (See *Back Tendons, Muscles*.)

Flies in summer time are a constant source of worry to horses, both in the stable and out of it. In the former case, a thin cotton sheet over the horse will provide him with some protection, and if the stable is kept rather dark, and some saucers of diluted carbolic acid are placed along the walls, the flies will not be encouraged to enter. For horses which are out at grass there is little that can be done, as even if it is convenient to dress their coats with some compound which the insects dislike, the fact that the flies usually attack the corners of the eyes and other sensitive parts renders it impossible to adopt effective precautions. Therefore the only thing to be done is to bring the horses in during the day.

Floors.—The question of providing proper flooring for stables is one for the serious considerations of horse owners, as, apart from considerations of health, a bad, slippery floor may cause an accident which will render a horse useless for months. The most usual floorings for buildings and yards are tiles, bricks, cement, asphalt, and cobble stones, the last mentioned being generally used out-of-doors, as they are totally unadapted for inside purposes, being far too apt to absorb moisture in the crevices between them. The best of all floorings for a stable are the hard, blue tiles which are usually seen in high-class establishments, and after them come the small, hard bricks, laid edgeways. Both of these provide a non-absorbent surface, which is easily swilled over and dried, in addition to which they yield a fair foothold for horses. This is more than can be claimed for either concrete or asphalt, which are consequently not to be recommended

as a flooring for stables or pavement for yards. (See *Asphalt, Brick Paving, Concrete.*)

Foaling.—The period of gestation in the mare is eleven months ; but the exact period is often exceeded, and occasionally the reverse, so the mare should be watched carefully lest she should drop her foal without somebody at hand in case of trouble. As her time approaches, her belly will drop more, and the flanks draw in, whilst the udder begins to

A correct Presentation.

increase in size. Soon after that a thick, sticky substance forms in her udder, but this turns into a white, milk-like fluid within a few hours of her foaling. Should all go well with her, the mare will require no assistance, and usually her troubles are over very soon. If, however, there is reason to suspect that something is wrong, and there does not happen to be an experienced man on the premises, a veterinary surgeon should be sent for without delay. The

proper way for a foal to make its entry into the world is with its fore-legs first and its head between them ; but it is not very unusual for complications to occur, and hence the necessity for professional assistance. A big, powerful mare which is having a bad time of it is sure to be beyond the powers of an amateur *accoucheur* to deal with, as observations may have to be made and possibly instruments used which may cost both her and the foal their lives if not properly performed.

Mares usually foal standing up, and this causes the navel string to break ; but if it does not, owing to her lying down, two pieces of tape must be tied round it, and it must be cut through between them. Unless the after-birth comes away within thirty-six hours, advice should be obtained in case it putrifies and causes blood-poisoning, which may result in death. Should the mare appear weak either during labour or after foaling, two or three ounces of brandy may be given to her ; and if she has had a long labour, accompanied by much straining, or if she is an old mare, a wide bandage may be put round her belly to keep it up and give relief to the muscles. As observed above, the average mare manages to get through her troubles pretty well by herself ; but with the highly bred and excitable animals it is often different, as these often either get frightened at the sight of their foals or take a dislike to them, so, unless some one is at hand, the youngster may be killed. If, however, the mare can once be got to lick the foal all danger will be past, and she may be often induced to do so by sprinkling some bran or flour on the back of the foal.

Should the dam prove herself to be a bad mother, and decline to attend to her maternal duties, the foal will have to be dried with towels, and if cold, its ears and legs should be rubbed so as to get them warm and promote circulation. One reason for having somebody near at the time of foaling is that the young one may come into the world so weak that it may be thought to be dead. If so, its face and mouth should be sponged with cold water, the nostrils should be

blown into pretty hard, and its chest slapped with a damp towel. Assuming that the mare has a sufficiency of milk of the right quality, and the foal can be got to suck, everything may be expected to go on well. On the other hand, if the milk supply is short, it may be necessary to feed the foal artificially, in which case cow's milk and water, in the proportion of three parts to two, and slightly sweetened with sugar, may be given in a bottle, or one of the substitutes for milk which are advertised can be taken instead. Attention to feeding may increase the yield of milk, and therefore grass may be given to the mare, as it is not desirable that she and her foal should leave their box for a day or two, whilst her dry corn may be knocked off and scalded oats and bran given instead; she should also be given plenty of gruel to drink. Sliced roots are very good if mixed with the mare's chop, as they assist in keeping the blood cool, and therefore reduce the chance of her udder becoming inflamed. Should this occur—the symptoms are hardness, heat, and tenderness—and warm fomentations and milking do not improve matters, professional advice must be obtained. (See *Brood Mare, Foals.*)

Foals are very often constipated when they are first born, but a dose of castor oil (about one ounce) will rectify this. Later on they are very liable to scour, and if the diarrhoea increases it may go hard with them, whilst under any circumstances they will lose ground. The best treatment is a dose of castor oil, as before, followed by feeding on boiled rice or gruel with a little starch in it, and the mare and her foal must be kept in their box. It is well, too, to endeavour to ascertain the cause of the scouring, and if the milk of the dam is suspected, her health should be attended to and a tonic administered. Some foals can feed quite well at a month old, whilst others commence later, but when they do so a daily small feed of scalded oats and bran, with a little salt added, will help them along, and in

the case of valuable foals this is worth remembering. (See *Weaning*.)

Fomentations.—A very usual mistake that is made when warm fomentations are being applied is to have the water too hot, as if it is just hot enough for the hand to bear it will be sufficient, excepting in cases of severe inflammation, when the hotter it is the better. When it is necessary to foment the stomach, as in cases of colic, the way to proceed is to soak a large blanket in very hot water and to spread it over the belly securing it by bandages, using in all such cases another blanket, or preferably a waterproof sheet, over it so as to keep in the heat. When the fomentation has to be renewed it may be done either by providing another blanket for immediate application when the first one is removed so as to reduce the chances of a chill, or else more hot water may be gently poured from the top of the blanket in use and allowed to run down on to it. When the blankets are finally removed the belly may be rubbed with some stimulating liniment to keep in the heat.

The best way to foment the legs is to place the injured limb in a bucket of hot water, and if the water has been thickened by the addition of some chaff or moss it will prevent its being spilled about the floor of the stable should the horse be fidgety. When the leg is removed from the pail, woollen bandages should be put on rather loosely. It should be borne in mind that after hot fomentations have been applied there is always a risk of the horse taking cold, and hence the part should not only be thoroughly dried but kept warm afterwards, and the animal must not be exposed to draughts or cold.

Food.—See *Feeding*.

Foot.—The feet of horses are perhaps the most important of all the many important portions of their anatomy, which

CLAMPTON SHIRE MARE HALSTEAD DUCHESS AND FOAL, PROPERTY OF LORD ROTHSCHILD.
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statement is fully supported by the old saying, "No foot, no horse," than which a more truthful maxim does not exist. The external parts of a foot are the walls or crust—that is, the outside horn, which extends from the coronet to the ground—the sole, and the frog; whilst the interior space contains the navicular bone in the back higher part, and the pedal or coffin bone, so called from its supposed resemblance in shape to a coffin in the lower front portion. In addition to these there are the necessary cartilages, tissues, and blood-vessels for connecting the bones and keeping the organ nourished. It will be seen, therefore, that a horse's feet are very delicate pieces of mechanism, as they, and the fore ones in particular, sustain the whole weight of the body, and hence their liability to suffer from the effects of inflammation produced, amongst other things, by concussion, laminitis, navicular disease, and bad shoeing.

The Foot.

(1-1 heels, 2 frog, 3-3 bars, 4 sole, 5 toe, 6-6 quarters, 7-7-7 wall.)

The fore-feet are larger and rounder in shape than the back ones, and should be of the same size, the outside walls being rather sloping, and the sole, which is formed of a softer, though tough, horn, rather arched; whilst the frog, which is a wedge-shaped, elastic cushion, is situated at the back of the sole, with the thin end pointing towards the toe. The bars of the foot are the ends of the wall at the heels, which turn inwards parallel to the frog, and, like the

latter, are unfortunately far too often tampered with by ignorant shoeing smiths. It cannot, therefore, be too strongly impressed upon owners that they should refuse to have the bars and frogs of their horses' hoofs pared away unnecessarily by the reckless use of the drawing knife, nor should they permit the outside walls to be rasped, as this undoubtedly injures the horn. In cases where the horn is dry and brittle, a very good dressing is mutton fat melted down and applied to the hoofs both on the walls and soles, as it becomes absorbed, and assists in replacing the natural oil of the horn, which may have been extracted by contact with a hot shoe or some other cause. (See *Contracted Feet, Frog, Heels, Hoofs, Shoeing.*)

Foot Pounds.—It has been calculated that a one-horse engine working for ten hours on end will raise a weight of 19,799,360 pounds 1 foot from the ground. No horse, however, is likely to be equal to such an achievement, eight hours slow walking with a traction of 100 pounds being equal to only 8,463,571 foot pounds a day; whilst slow farm work has been estimated as being a little under 3,000,000 pounds more. Much, however, must depend upon the speed as well as upon the weight of the load; but it has been calculated that the following represent a fair average in foot pounds: a hard day's work at the walk, 11,500,000; a hard day's work at the trot, 7,233,000; the difference being due to the fact that there is less waste of tissue when fast work is being done, as less force is required to execute this. The above figures may be found useful to owners who are calculating the amount of food their horses should be given.

Forage.—Many owners in a small way find it advantageous to contract for the foraging of their horse by a local tradesman at a fixed amount, which must, or should, depend upon the market price of the corn, hay, and straw supplied. From about half a guinea to twelve shillings may,

however, be regarded as a fair average price to charge for a week's forage. (See *Food*.)

Fore-arm.—The fore-arm is that part of the front leg which extends from the shoulder to the knee ; it possesses two bones—namely, the radius, which is connected with the above-mentioned joints, and the ulna, which is united with it at the back, and which projects above it, the top of the ulna forming the point of the elbow. (See *Fore-legs*.)

Forehand.—The term applied to the front part of a horse's conformation, which includes the head, neck, chest, shoulders, and fore-legs.

Forehead.—The front part of a horse's head which extends from the occipital crest to the eyes, where the face commences.

Fore-legs.—The fore-legs consist of three joints—namely, the elbows, the knees, and the fetlock—and three sets of bones. The elbow is connected with the shoulders above and the knee below by the fore-arm, which is made up, amongst other things, of two bones—the radius, upon the top of which the humerus or lower shoulder bone rests, and the ulna, which is situated behind it, the top of this bone forming the point of the elbow. The knee possesses two rows of bones, the chief bone of the joint being known as the pisiform, and this is curved inwards, forming a groove for the back tendons to pass through. The knee and the pasterns are connected by three bones—namely, the cannon bone in front, and the two splint bones behind it. Below the pastern, and connecting it with the foot, comes the fetlock joint, which contains the long and short pastern bones and the sesamoid bone ; whilst the bones of the foot are the pedal or coffin bone in front, and the navicular bone behind and above it, joining the short pastern bone.

There are also muscles connecting the fore-leg with the

FORE-LEGS

shoulders and breast, and others attached to the knee and fetlock, which enable the horse to bend his joints. The

Bones of the Fore-legs.

1. Radius.
2. Pisiform.
3. Cuneiform.
4. Trapezoid.
5. Unieform.
6. Inner small metacarpal or splint bone.
7. Large metacarpal or cannon bone.
8. Sesamoid bone.
9. Suffraginis or long pastern bone.
10. Os Coronæ or small pastern bone.
11. Os Pedis or coffin bone.
12. Navicular bone.

principal muscle which bends the knee extends from the shoulder to the knee and passes downwards behind it to the splint bones; and there are also muscles passing down the back of the fore-arm down to the coffin bone which enable the horse to bend his fetlock and pastern joints. Above the knee these muscles are connected by the back tendon which runs through the groove in the Pisiform down the back of the cannon bone. The suspensory ligament, which is the main support of the fetlock, is placed at the back of the cannon bone between the two splint bones, commencing at the top of the former and dividing into two a little more than half-way down to the fetlock, the two branches connecting with the sesamoid bones, after which they extend towards the front and join the tendon of the muscle which extends the foot at the middle of the pastern.

The fore-leg should be long in the fore-arm and short in the cannon bone, whilst the pasterns should be fairly long and sloping. If too long and too sloping they

are apt to be weak, but if they are too short and upright they will not stand the concussion they receive at work, and the action of the horse will not be so smooth and easy. A

long cannon bone predisposes weakness of the sinews, and small knees betoken weakness, whilst the Pisiform should be prominent so as to enable the tendons to stand out well, otherwise the leg will be tied in. Below the knee the leg should be big and flat, the more bone the better, any approach to standing over or calf knees being a great fault. (See *Calf Knees, Elbow, Fetlock, Foot, Knees.*)

Forelock is the term applied to the continuation of the mane, which extends between the ears and hangs over the forehead.

Forging.—The act of forging consists of the horse hitting the inner edge of the fore-shoe with his hind toe. The best

Forging.

course to pursue is to shorten his hind toe, and to put the shoe back a little. (See *Brushing, Over-reaches, Speedy Cut, Shoes, Treads.*)

Forks should never be kept in the stable, and wherever they are placed when out of use the prongs should always be on the ground. Nor is there any necessity for having sharp prongs to a stable fork, which is only used for bedding up

the horses or removing the litter from under them. Sharp points have caused many accidents to valuable horses.

Foster-mothers.—Few mares take kindly to another's foal, but there are authentic instances recorded of their doing so. In the case of an orphan foal, or if a mare has not sufficient milk for her own, it is worth while trying to persuade one which may have lost her own foal, or has one of less value at foot, to adopt the superior youngster. Her own foal, if she has one, must be removed out of her sight and hearing and kept away from her, and it will be necessary for some one to be close at hand until she takes to the foster-foal and allows it to suck, as otherwise she may injure it very seriously. If some of her own milk is drawn off and sprinkled over the strange foal's head, neck, and back, she may be more readily induced to take to it.

Founder.—See *Laminitis*.

Fractures.—As a rule it is a difficult matter to mend the broken bones of horses, as they are very bad patients and will often undo the results of many weeks' attention by their restiveness when almost cured. Fractures are of four kinds—namely, simple, when the bone is broken but the skin not pierced; compound, when the broken bone penetrates the skin; comminuted, when the bone is broken in several places, as often occurs in cases of split pasterns; and complicated, when the fracture extends to the surrounding tissues. In cases where a doubt exists as to whether the bone is actually broken, the point can be settled by hearing the ends of the fracture grating against each other, and then the fate of the patient can be decided.

Treatment.—Fractures are obviously matters which are beyond the power of an amateur horse doctor to deal with, and hence no time should be lost in procuring the best professional assistance available. Meanwhile, the horse should be placed in slings, with the knowledge that should it be

decided that an attempt at curing him is to be made he will be kept there for at least a couple of months. Until the arrival of a veterinary surgeon, the seat of injury should be interfered with as little as possible, but if the animal is suffering great pain, cloths soaked in very cold water may be gently applied from time to time, and if the skin is not broken the addition of a little vinegar to the water may assist in granting relief. (See *Fomentations, Nursing, Slings.*)

Free Action is exactly the reverse of round action, as it represents plenty of propelling power behind, and the proper use of the shoulders. A free mover, in fact, uses his shoulders,

Free Action.

knees, pasterns, stifles, and hocks to the best advantage when he moves, and gets his fore-feet well out in front of him. (See *Propelling Power, Round Action.*)

Fright.—Some very serious accidents have occurred through a horse suddenly taking fright and bolting, and hence it is never safe for a driver or rider to become careless

and lose control of the animal in front of, or under him. Many horses are by nature extremely timid, and if these are alarmed by something they see or hear it may be very difficult to stop them when they once get going. Defective sight is a very common cause of fright, as objects become distorted owing to the impaired vision to such an extent that the animals are almost driven mad. It may be added, too, that they are terribly affected by fear of fire, and that many of them evince a great aversion, if not terror, at the sight and smell of blood. (See *Bolting, Cataract, Eyes.*)

Frog.—The frog is a wedge-shaped, elastic cushion of soft horn, which extends from the back of the foot, being attached to the coffin bone by a series of fibres. Its duty is to reduce concussion, and hence the absurdity of tampering with it by cutting a portion away, as many shoeing smiths will if they are not stopped. Owing, however, to the practice of shoeing horses, it necessarily follows that under the ordinary methods the frog is raised above the ground, and hence its usefulness is diminished. In cases of lameness, however, when the shoes are removed it becomes of great assistance to the horse. Owing to its position, nature, and the incompetency of shoeing smiths, the frog is a victim of injuries and diseases which require attention if serious consequences are to be avoided, and it must, therefore, be remembered that a healthy, well-cared-for frog usually means a healthy foot. (See *Contracted Feet, Foot, Shoeing, Thrush.*)

Frost Nails are nails fixed in the shoes to prevent horses slipping in frosty weather. They are usually nails of rather greater length than those in ordinary use, so that the heads need not be driven into the shoe as is customary, but be flattened down so as to grip the ground, for which purpose steel heads are the best. Another plan is to have extra holes punched in the shoes at the heels and sides of the toes in a slanting direction, so that nails can be driven through

them and turned up without touching the hoof. Some persons advocate sharp calkins, but their use necessitates the shoes being removed, and therefore it is better to use studs which screw into holes in the shoe by means of a key; or else square studs which can be driven into the holes by a hammer. The last-mentioned provide the best preventative against slipping of all, provided that they are well made. (See *Sprains*.)

Frozen Grass is regarded by many people as highly prejudicial to the health of horses which may eat it, but if the theory is correct, there would be many more cases of sickness amongst animals turned out to grass than are now reported. At the same time, it cannot be regarded as a desirable form of food, and hence it is wise to supply the horses lying out with a sufficient quantity of hay to provide them with a feed in the morning. (See *Turning Out*.)

Furniture.—The metal mountings of harness, such as the hames, terrots, buckles, etc., are collectively alluded to as the furniture. They are usually either brass or silver-plated, the under parts of the more substantial pieces such as the hames being generally of iron. With some cheaper sets of harness nickel furniture is supplied, and it possesses the merit of not requiring to be plated, but, on the other hand, it never looks so well as the latter. In cases of plating, however, if the work is not of the best, or very near it, hard wear soon removes the coating and causes the metalwork to become spotted in appearance, and consequently the best workmanship, though it may cost a little more at first, will be found the cheapest in the end. (See *Appointments, Harness*.)

Furze is at best a poor food for horses, but it is occasionally used in some parts of the country for cart-horses, and if so should be bruised. Animals lying out in winter are often compelled to eat it, in the absence of other keep, which may be covered by snow, and if so they are some-

times to be seen pounding it with their feet to soften it before taking it into their mouths.

G

Gag Bit is a severe and totally unnecessary development of the bearing-rein, and has done much to bring the latter into disrepute amongst people who are unable to distinguish the great difference that exists between the two. It consists of a bit attached to a round rein passing from the cheek upwards through rings near the brow-band to the pad-hook, and drawn so tightly that the corners of the lips are dragged upwards. If this bit is associated with a severe curb chain linked up very tight, the horse is unable to move his head without torture, and is therefore compelled to stand or move with his lips almost cut through at the corners, and his head forced back in an unnatural and very painful position. (See *Bearing-rein, Harness.*)

Gag Rein.—See *Gag Bit*.

Gait.—See *Action, Canter, Gallop, Trot, Walk*.

Gallop is the fastest pace at which a horse can move, and may almost be described as an exaggerated canter, the main difference between the two gaits being that in the gallop the hind-leg is put down on the ground before the fore one on the other side. (See *Action, Canter.*)

Galloway is the term applied to undersized thoroughbreds, under 15 hands, which are used for racing outside Jockey Club Rules. Owners taking part in the meetings of the Pony and Galloway Society, however, do not incur the risk of being warned off the turf if they race under the former rules; but the Galloways which run at such meetings are debarred from running under either Jockey Club or National Hunt Rules. An attempt to explain the reason for such contradictory laws is obviously impossible.

Galls arising from the chafing of some part of the harness, usually the pad, or the saddle, or girths, often cause a good deal of annoyance. In some cases horses which are liable to them may be successfully protected by the use of saddle or pad-cloths, or a piece of sheepskin may be placed under the girths. A badly-fitting collar is another constant cause of galls, and in such cases relief may be obtained by either cutting away some of the lining which presses on the sore, or else by placing pads of felt or flannel in such positions that the pressure may be removed.

Treatment.—Fomentations of salt and water or alum and water should be applied, or in obstinate cases a dressing of glycerine twenty parts and carbolic acid one part may be found efficacious. (See *Prescriptions, Sore Backs.*)

Garron Ponies.—These are the biggest and best built pure-bred ponies of Scotland; they come from Perthshire and the Central Highlands, the Duke of Atholl's stud at Blair Atholl being the best known. In colour they are black, brown, dun, sometimes with the black stripe down the back and black points, piebald, black or brown and white, and sometimes grey. They are noted for their good feet and legs, well set on tail, game heads, and good shoulders. In height they average 14 hands, and for sure-footedness and general all-round staying power cannot be beaten. This breed is fortunate in that no attempts have been made to "improve" it by the introduction of stallions of other blood.

Gaskin.—The gaskin is the part of the hind-leg above the hock and below the thigh, hence it is sometimes alluded to as the second thigh. (See *Hind-legs, Points.*)

Gelding.—A castrated horse. (See *Castration.*)

Gestation.—The period which elapses between conception and foaling, usually eleven months. An erroneous impression exists in some quarters that if the above period is exceeded the foal will be a colt, and if it is less that the result will be a filly. (See *Brood Mare, Foaling.*)

Getting Hold.—(A) A horse is said to get hold of his bit when he puts his heart into his work, and without actually pulling, lets his driver feel that he has got something in front of him.

(B) A slang term applied to the act of a crib-biter, which is sometimes referred to as “getting hold” of his manger.

Getting up.—It may be pointed out that when a horse rises he does so by raising himself on his haunches with his fore-legs slightly extended in front of him and both feet on the ground, then he raises himself on his hind-legs. In cases where a horse falls and the ground beneath him is slippery it is often necessary to strew sand or gravel on it so that he can obtain a foothold, but if this is not procurable a rug or sack or two will serve the purpose. Should the supply of sand or sacks be limited it is necessary to pay more attention to securing a foothold for the fore than for the back feet.

Gig is any two-wheel vehicle constructed to carry only

Gig.

two passengers. It is sometimes fitted with a leather hood, but is as often used without.

Gig Horse.—A 15-hand, 1-inch horse of fair substance

and good bone, with action, is the stamp of animal required for gig work.

Gingering.—The practice of forcing an irritant such as ginger or cayenne pepper up the rectum of a horse in order to make him carry his tail up. (See *Fidding*.)

Girth.—The distance a horse measures round any particular part of his body.

Girth Galls.—See *Galls*.

Girthing.—Many people make the mistake of girthing their horses too tightly, the consequence being that the action of the heart becomes affected, and the animal is thereby distressed unnecessarily. On the other hand, loose girths are a very potential source of trouble, so the happy medium should be observed, and, generally speaking, it is safest to rely upon the old rule that the girths are tight enough if two fingers can be squeezed in between them and the horse's belly.

Girths are usually made of webbing, but occasionally of leather or raw hide. The latter are a good deal used in the Colonies and other places where there is hard work to be done, and saddlers are scarce. They do not, however, commend themselves to riding men at home, but they wear for a very long time and stand the strain put upon them by a buck-jumper better than webbing girths would. (See *Girthing*.)

Glanders is an incurable and highly dangerous disease, and it is undoubtedly communicable to man. Fortunately, thanks to efficient legislation, it is on the decline, but, as in the case of farcy, a large number of animals are still annually attacked by it, in spite of the efforts of successive governmental authorities to stamp out glanders altogether. When a case, or even the suspicion of either glanders or farcy occurs in

a stable, the local authorities should at once be notified—this is compelled by law—and the suspected animal should be immediately isolated. His stable companions should likewise be kept by themselves away from other horses, and strictly watched to ascertain whether symptoms appear; whilst the litter and droppings should be carefully collected and burned, and all the woodwork of the stable, particularly those parts which may have been in contact with the heads of the horses, and the floors should be thoroughly scoured out and disinfected, the walls and ceilings being lime-whited, and carbolic acid must be added to the water in which the lime is mixed. Extreme care should be taken in discharging the above duties, and when touching an affected or suspected horse, as many fatal cases of glanders have been known to occur amongst grooms and others.

Symptoms.—A thick, sticky, lead-coloured, offensive discharge from the nose—only one nostril being usually affected—which, if placed in water, will sink. Ragged-edged ulcers usually appear in the nostrils, and the glands frequently adhere to the jaw. If these symptoms appear it is an undoubted case of glanders, and the horse should be at once destroyed, and his body either burned or buried deep in quicklime. (See *Farcy*.)

Going up to Horse.—A horse ought always to be approached from the near side when he is in a stall, and in fact on all occasions when possible, as he is accustomed to this. The wise man approaches a strange horse warily, as there is never any knowing what an animal's vices may be. When the hand once gets on the horse's withers, and he allows himself to be patted, the risk of danger is considerably reduced, but there is still a risk of a playful bite or a cow-kick. In short, one cannot be too careful with a horse until his peculiarities are understood. (See *Biting*, *Cow-kick*, *Kicking*.)

Goose Rump.—A term applied to quarters which droop

and cause the tail to be set low down. (See *Drooping Quarters*.)

Governess Cart.—A small, two-wheeled vehicle constructed to carry four, and with no driver's seat. Those riding in it sit two aside and face to face, the driver usually being next to the horse on the off side.

Grass forms an excellent summer food for horses, as it is cooling to the blood, but its nutritive properties are not high, and it is certain to create looseness of the bowels. Alone, therefore, it is not a sufficient food for a horse in work, though in cases of sickness or those of animals which are doing nothing, grass is very good indeed; but it varies in quality according to the soil on which it grows, a fact which should be borne in mind. (See *Ergot*, *Mildew*, *Rust*, *Smut*, also *Pasture*.)

Grass Rings are the ridges which extend round the outside of some horses' feet after the animals have been out in damp meadows for some time, or have been standing in water. (See *Fever Rings*.)

Grease is an offensive, greasy discharge from the pasterns or hollow of the heels, owing to the increase of oil in the skin, which is the result of inflammation. After a time the skin cracks and ulcerates and the legs swell, causing the animal considerable pain, which culminates in lameness. Heavy horses are the principal sufferers from grease, which is usually due to their being neglected and kept in dirty stables.

Treatment.—If there is much inflammation the pasterns may be fomented with hot water, or poulticed, and oxide of zinc ointment, carbolised oil, or bluestone applied to the parts affected.

Great Horse was the name by which the heavy or war horse of our ancestors was known. These animals, though

the heaviest in the country, were very considerably lighter and less bulky than our modern Shires, Clydesdales, and Suffolks. There is no doubt that the Great Horse was descended from the horses which drew the war chariots of the Ancient Britons, improved by crossing with sires imported from Flanders by successive British sovereigns, the first monarch to devote attention to the subject being King John. (See *Shire Horse*.)

Green Food is no doubt beneficial to horses in the hot weather, as it tends to cool the blood. At the same time light horses in hard work should be fed sparingly on it, and the quantity given them at first should be small, but it may gradually be increased.

Gripes.—See *Colic*.

Grogginess.—A horse is said to move groggily when he goes tenderly on his feet without the cause being clear. Grogginess may be a temporary result of overwork, but it is well to examine the horse carefully to ascertain the source of the trouble.

Grooming.—The importance of regular and thorough grooming cannot be over-estimated, as not only does it improve the appearance of a horse, but it keeps the skin in good order, and hence contributes to the health of the animal. A superficial rub over with the body brush is of no real use; the entire body requires to be thoroughly gone over with the body brush if the coat is short, or with the dandy brush if it is long. The curry-comb should not be applied to any part of the horse, its use being to remove the scurf and dandruff from the body brush, the bristles of which soon become clogged, unless they are brought into contact with some rough, hard substance such as the ridges of the curry-comb, but the latter are liable to injure the skin of a horse. After the brushing is over a linen cloth should be used for

imparting the final polish, plenty of time being devoted to the work. The face and ears should be lightly gone over with a damp sponge and then thoroughly dried on a soft towel, as also the parts on which no hair grows. If necessary, the mane and tail should be combed, but too much of this sort of thing is apt to bring out the hair, and therefore as a rule the dandy brush is sufficient to do all that is required. (See *Body Brush*, *Curry-comb*, *Dandy Brush*, *Heated Horses*.)

Gruel.—To make gruel put 1 lb. of oatmeal into 4 quarts of cold water and place on the fire, stirring it well to prevent it getting lumpy, and taking care that it does not become smoked, as if it does the horse will not eat it. When it comes to the boil set it on the hob for a few minutes, then stir again and pour into a pail to cool.

Grunting.—When a horse grunts if suddenly startled or being struck, there is a good cause of suspicion that he is unsound in his wind, and he should be closely examined by a competent person. It is not invariably the case, however, that a grunter is unsound, but it may be added that he usually is.

Gullet Plate of a saddle is the arch under the pommel which protects the withers of the horse from being rubbed and communicates with the gullet or groove which runs the whole length of the underpart of the saddle to the cantle. (See *Cantle*, *Saddle*.)

Gyp Horse.—A term used in some parts of the country to describe a horse, one of whose parents belongs to a Heavy and the other to a Light variety. (See *Half-bred*, *Heavy Horse*, *Light Horse*.)

H

Hack.—A description applied to a riding horse. (See *Lady's Horse*, *Park Hack*.)

Hackney Horse.—The hackney horse, in spite of the opposition of his opponents, is unquestionably the finest harness horse in the world, his value being recognised by the breeders of every nation. So far as the show ring is concerned, he certainly possesses no superior as a harness horse, as hackneys are invariably the winners of by far the greatest number of prizes, whilst the stamina of the breed is proved by the fact that the long-distance road championship of America was held for a considerable period by an English-bred representative of the variety.

Regarding the antiquity of the hackney there can be no two opinions, as the Stud Book of the breed shows that many a modern horse is a direct descendant of the famous blood-horse Flying Childers, from whom so many thoroughbreds are descended, and there are reasonable grounds for believing that there was a connection between the mares which assisted to form the two varieties. This possibility is rendered all the stronger by reason of the fact that until the appearance and spread of railways the hackney was mainly a saddle horse, but since the British agriculturist gradually abandoned the practice of riding long distances to market, the harness properties of the breed have been steadily developed.

From very early times the merits of the East Anglian trotting horse—that is, the hackney, whose name is popularly believed to have been derived from the ancient word *hnegan*, to neigh—have been generally recognised, so much so that he soon began to be found in counties adjacent to his native Norfolk, and as a matter of fact the stronghold of the breed has for many years past been Yorkshire. Of late years successful attempts have been made by hackney breeders to increase the height of their horses from the 15 hands 2 inches, which was formerly the extreme limit permitted at the Royal Agricultural Society's Show, to 16 hands and over. Whether the breed has benefited by the change is a matter of opinion, but there can be no doubt at all that the value of the hackney as a harness

MESSRS W. AND J. FERGUSON'S HACKNEY STALLION, RUDSTONE PRINCE.

horse has been depreciated by the favour extended by breeders to the Denmark family, amongst which chestnuts predominate, the result being that such popular colours as bay and brown are comparatively rarely seen, whilst blacks are practically extinct.

In shape the hackney should be a powerfully - built, short-legged horse, with a fair-sized but well-finished head, a rather wide chest, a short back, big middle, and long, level quarters. He should have plenty of nice flat bone and rather large feet, and carry himself well and gaily when he moves. His superb trotting action is, however, the great characteristic of this horse, who is capable of using his knees better than any other member of the equine race, whilst the manner in which he flexes his hocks is remarkable. The hackney, moreover, is not merely a high goer, as he can make fine use of his shoulders and pasterns, a very beautiful characteristic of his action being the momentary pause with the fore-foot just off the ground, when the horse is moving at full speed. In short, the true hackney action is a combination of high-stepping, liberty, and pace such as is possessed by no other breed of horse.

Hackney Pony.—This pony is in many instances merely a hackney horse which, by a system of inbreeding, has been reduced to pony proportions, that is, does not exceed 14 hands 2 inches in height; others are produced by crossing a full-sized hackney stallion with a pony mare; but in either case, though the hackney action is conspicuous, the true pony character which is so great an attribute of the real pony is entirely missing. Still, the hackney pony, even in those cases where he is nothing more than a dwarf hackney, possesses legions of admirers, and is perhaps the most saleable of all horses, the thoroughbred alone excepted.

Hair, or Feather, is the term applied to the hair which all horses carry to a greater or less extent on the back of their legs. In the case of Shires and Clydesdales the growth

should be profuse, fine in texture, free from curl, extending from the pastern almost to the back of the knees and hocks. In the light breeds shorter hair grows on the fetlocks, but this is removed by pulling it out. It should never be cut.

Half-bred.—A term usually adopted to describe a horse which possesses a greater or less strain of thoroughbred blood. It can, however, be applied to the cross-bred stock of other recognised varieties, but in such cases it is customary to mention them by name. (See *Gyp Horse*.)

Half Shoe.—(See *Tips*.)

Halter.—The bridle of webbing which is used for leading

Halter.

Emergency Halter.

horses. A serviceable halter can be made of rope in cases of emergency, as shown in the accompanying illustration.

Hame Strap.—The small strap which fastens the hames

together at the top. If a harness horse falls in an awkward position this may be unbuckled so as to loosen the traces. (See *Hames*.)

Hames.—The bent pieces of metal, connected by links at the bottom and fastened by a strap and buckle at the top, which fit into a groove in the collar. The traces are attached to the lower middle part of the hames, and towards the top there are rings for the reins to pass through. (See *Collars, Harness*.)

Ham-string.—The tendon which runs down the back of the second thigh to the point of the hock. (See *Hind-legs*.)

Hand.—A hand is the unit of measurement used in referring to the height of horses, and represents 4 inches. Thus the horse of 61 inches would be referred to as standing 15 hands 1 inch. (See *Height*.)

Hand Gallop.—A fast, smooth canter such as a rider enjoys when his mount settles down at a rate which does not quite approach his fastest speed. (See *Canter, Gallop*.)

Handiness.—A horse is said to be handy when he not only has been well broken, but will answer readily to the bit, or the touch of his rider's legs. Handiness, in short, is the ability to turn and move gracefully without reluctance. (See *Manners*.)

Handling.—All foals should be accustomed to be handled from their earliest days, as if so they will be less shy and timid as they grow up, and cause less trouble to their breakers. Consequently, the man who has foals in charge should as frequently as possible rub their heads (it is remarkable how some horses dislike having their heads touched), pick up their feet, and generally familiarise them with the touch of the human hand. (See *Breaking, Foals*.)

Hand-rubbing is most useful in reducing fulness of the legs, as well as in warming them if they are cold ; or in alleviating pain. A good rubber is an acquisition to any stable, as there is a knack required to produce the best results. When the limbs are rubbed the hair should not be gone over the wrong way.

Hands.—The hands of a rider or driver have a great deal to do with the control he exercises upon his horse, as however good his judgment may be, if a man possesses heavy hands he is unable to avoid putting unnecessary weight upon the animal's mouth. A delicate touch is the result of light hands, and hence the possessors of these are capable of controlling a tender mouthed or excitable horse better than those who, possibly through no fault of their own, bear heavily on the bit. Good hands, in fact, may be briefly described as the possession of a delicate touch such as most women possess. (See *Driving, Riding.*)

Hanoverian Horses.—The origin of these breeds is rather obscure, for, though probably founded on horses of Danish extraction, they have for so long been associated with Hanover that authentic information is hard to obtain. The two distinct breeds resemble each other very closely in make and shape, the only difference being that of colour, as one breed is pure white and the other cream. The former were used to draw the King of Hanover's state carriage, and a curious fact about them is that they are always foaled pure white, hence their name—white-boned horses.

The cream horses were used for the Queen Consort's equipage, and were called Isabels. A team of this variety was presented to Queen Victoria by the late King of Hanover, and descendants of this strain are still used by King Edward VII. on all State occasions, and there is reason to believe that His Majesty is the only remaining breeder of the Isabel horses, as the original studs have been dispersed.

Harness.—The accompanying illustration shows the chief parts of a horse's harness.

- 1 Brow-band.
- 2 Blinkers.
- 3 Nose-band.
- 4 Bit.
- 5 Bridoon.
- 6 } Bearing-rein.
- 7 }
- 8 Throat latch.

- 9 Hames.
- 10 Collar.
- 11 Martingale.
- 12 Traces.
- 13 } Terrots.
- 14 }
- 15 Pad.
- 16 Pad Hook.

- 17 Pad cloth.
- 18 Tugs.
- 19 Belly-band.
- 20 Breeching.
- 21 Crupper.
- 22 Reins.

Harness Horse.—The sort of horse to select for harness purposes must entirely depend upon the work for which he is required and the sort of vehicle he will have to draw. For the heavy landau or state coach a very different type of horse is required to that wanted for work in a victoria, as in the former instance a big, imposing-looking animal, as near 17

hands as possible, or over, not too fast or high in action, is sought for, whilst in the latter, one of 15 hands 3 inches, or 16 hands, will be big enough, but he must be a mover and capable of getting over the ground. The brougham horse occupies an intermediate position between the above, as he should possess more substance than the victoria horse and more style and quality than the coacher; whilst the buggy horse not only should be a brilliant mover, but he should show no coarseness and yet have substance. In all cases the harness horse should stand on a good set of well-made, full-sized feet, and his legs should be flat and have plenty of bone, the pasterns being long and sloping enough to withstand the work on hard roads, which, as these horses are more or less high-steppers, might otherwise produce concussion. The neck should be of a nice length, else he will have a difficulty in saving himself should he stumble, and of course a well-laid shoulder is desirable for the same reason; but a long, sloping one is not so essential in a harness horse as it is in a hack. The ribs should be well rounded and the chest deep, the back short and the quarters long and level, with the middle-piece well ribbed up at the loins. Action, however, is one of the most important characteristics of the harness horse, and without it his value is comparatively small, no matter how good-looking he may be. (See *Action, Cleveland Bay, Hackney, Yorkshire Coach-horse.*)

Harnessing.—(See *Driving.*)

Harness Room.—It is essential that if harness is to look and wear well there should be a proper place provided for keeping it in. Hence the mistake of hanging up harness in the stable, where the leather is soon damaged by the exhalations of the horses, or in a cold place, where it becomes hard and apt to crack. A warm coach-house will do if no better accommodation can be provided, but it is far better to have the harness in a room by itself, and there should always be a stove available for use in cold weather; and if there is a

glass case to hold the bits which are not in use it will be all the better. In small establishments where it is not necessary to erect a separate boiling house with a copper to supply hot water, the heating apparatus of the harness room may consist of an ordinary range, which will heat the place and the water as well.

Hay.—The importance of providing horses with hay of sound quality and high nutritive power is often overlooked by owners, who pay the penalty through their horses losing strength, or even their lives, as many deaths have resulted from eating mouldy hay which has set up inflammation of the bowels. As a general thing it is not wise to give a horse long hay, that is, hay of the same length as it is when it is cut, as he is apt to pull it out of the rack and let it fall on the ground, where it gets trod upon and soiled, in which case he may refuse to eat it, or if he does swallow it, the hay will not do him much good. The last thing at night when a horse is bedded up, an armful, more or less, of long hay may be placed in the rack for him to pick over and amuse himself with, but during the day it is best to give him his hay in the form of chaff mixed with his corn, as this arrangement compels him to masticate his food properly. The best quality of all is upland hay, and it should be bright-looking and crisp, rather green in colour, and possessed of an attractive smell and pleasant flavour. On the other hand, hay which comes from wet land is coarse, hard, darker in colour, and comparatively odourless and tasteless, added to which its nutritive powers are low. Bad specimens of this sort should always be rejected by horse owners, especially if they contain quantities of weeds, as they often do; and hay which possesses an unpleasant smell or appears mouldy should on no account be used, unless it has been previously steamed. A good deal of the virtue of hay must depend upon the weather at the time it was cut, and this will also influence its quality after it has been stacked for a while. New hay—that is, under a year old—is greener

and softer to the touch than that of a greater age, but good hay well harvested is generally at its best at about eighteen months old. A truss of hay should weigh 56 lbs., new hay occupying more space than old, and weighing 60 lbs., 30 trusses of either going to a load. (See *Chaff, Feeding, Mildew.*)

Hay Tea is a very useful drink for a sick horse, and may be regarded as equivalent to barley water in the case of a human invalid. The way to prepare it is to fill a stable pail three parts full with the best hay procurable, and fill up with boiling water. Then place a cover on the pail and leave to soak; the fluid is fit for the horse to drink when cold and it has been drained off.

Head.—According to the ideas of most people the formation of a horse's head supplies an insight into the disposition of the animal, a heavy, coarse head being regarded as likely to be associated with a sullen temperament, whilst an elegant one is usually connected with vivacity and high spirit. At the same time, many a sour-headed horse has proved himself to be a determined plodder, and therefore it is unwise to discard an animal solely because of such a failing. It must be remembered, too, that in the case of some breeds a head that would be heavy in another variety is the thing that is required in it: for instance, the elegant, refined head of the blood-horse would look ridiculous on a hackney or coacher, and that of the Shire is coarser than the headpiece of a Clydesdale. Regarding the light breeds of horse, such as the hunter and various harness breeds, it may be observed that the forehead should be flat and carried in a straight line down the face to the nostrils, a projecting forehead or Roman nose being regarded as unsightly. There should be plenty of depth and width of the jowl, from which point it should taper, more or less according to the breed, towards the muzzle. The eyes should be of good size, but not too large, and the ears small and fine, their

situation being at the top corners, but not too high up, else the poll will be too narrow, and spoil the horse's appearance. The length of the head in a well-proportioned horse should be the same as from the top of the withers to the point of the shoulders, and from the point of the hock to the ground.

The principal bones of the head are — the Frontal or forehead bone, the Parietal, of which one is on each side from the Frontal to the Poll; the Occipital at the back; the Temporal, which connects the Parietal and Occipital; the Lacrymal, situated in front of the eyes; the Nasal or nose bone; and the Superior and Inferior Maxillary bones, which are the upper and lower jaws. (See *Bones, Ears, Eyes, Poll, Roman Nose.*)

Head Collar.—The leather halter which is worn in the stable.

Head Collar Rope.—The rope attached to the head collar, which runs through a ring in the manger, the other end being fixed to a log or weight, in order that the rope may not become slack, and get over the horse's leg. Ropes or

Head Collar.

leather lines are infinitely superior to chains for fastening up horses, as the noise of the latter running through rings deprives other animals of their rest.

Head-stall.—See *Head Collar.*

Heart.—The heart is situated in the chest between the fore-arms, and its use is to act as a pump to force the blood through the arteries and capillaries towards the veins, by which it is carried back to the heart, which is in two parts,

though they are so closely joined as to appear to be only one. The right one feeds the lungs and the left one the other parts of the body, the length of the heart being about 8 inches and the weight about $6\frac{1}{2}$ lbs. (See *Arteries, Blood, Capillaries, Veins.*)

Heated Horses.—The greatest care should be taken to prevent a horse from taking a chill when he comes in heated from work, and therefore if he cannot be properly attended to at once he should be walked about if possible for a while. After the harness is removed and hung up, if he is sweating profusely the scraper may be used to get as much as possible of the greasy perspiration out of his coat. On no account should he be allowed to stand in a draught, as this is most dangerous, and his body should be wiped dry after the scraper has been used and he has been allowed to stand for a while with a rug laid lightly over him. Some grooms prefer to place a little straw on the back under the rug to absorb the moisture, and the practice is a good one when there is a heavy coat on the horse. If the ears are cold they should be pulled, and woollen bandages may be placed loosely on the legs after they have been rubbed to keep them warm. In hot weather, if it is desired, the whole body may be sponged over with tepid water and then thoroughly dried, particular care being bestowed upon the hollows behind the pasterns; but in the autumn, winter, and spring the less water that goes on him the better, excepting on the feet, dock, and sheath. The face also may be sponged over, and all should be thoroughly dried afterwards, but care should be taken to avoid wetting the belly or pasterns lest mud fever or cracked heels should result. After the horse has been thoroughly wiped over, and become dry and comparatively cool, his ordinary clothing may be put on him and the woollen bandages changed for linen ones. Any superfluous mud that is left on the body, belly, or legs after wiping can be easily brushed out of the coat when the horse is next dressed. (See *Cracked Heels, Mud Fever.*)

Heavy Horse.—The description applied to the big draught horse varieties, such as the Clydesdales, Shires, and Suffolks, which see.

Heavy Shoes. — Although heavy shoes entail more exertion upon a horse when he moves, and therefore are calculated to tire him when he goes on a journey, it is a well-known fact that in the case of a high-stepper they improve the bend of the knees. Hence the common practice amongst exhibitors of hackneys and harness horses of loading their animal's feet with a great weight of iron, the shoes sometimes being made so wide as to almost cover the sole of the hoof. This is a most objectionable course to take, and is prohibited at some shows, as distinctly unfair to those who show genuine and not artificial movers. (See *Action, Breaking, Shoeing.*)

Heavy Top.—A horse is described as being heavy topped when his neck and shoulders are coarse, and out of proportion to the other parts of his body.

Heels.—The lower back parts of the wall of the hoof. (See *Foot.*)

Height.—The height of a horse is taken from the top of the withers in a straight line to the ground, and is ascertained by placing the animal under a standard, of which there are several designs. Considerable experience is required to arrive at accurate results, as many horses will crouch down under the standard, or stretch themselves out in such a manner as to considerably reduce their height. As a consequence, they should be made to stand up properly, and the floor on which they are measured should be perfectly level. It is well known, too, that an animal that is hot and excited will measure much taller than he will if he is cool and collected, and hence the necessity for insisting that he is in a normal condition when placed under the standard; and

the thickness of his shoes should be noted. Measuring from the withers is not an altogether satisfactory arrangement under the best of conditions, as some horses possess so much higher withers than others, and it might therefore be better to take the height at the point of the loins also. In America it is customary to refer to the weight as well as the height of a horse—a very sensible practice, as it supplies a good idea of the proportions of the animal. (See *Hand, Standard.*)

Hemorrhage.—See *Bleeding.*

Heredity.—The latent power which exists in a strain or family for transmitting qualities or defects to its members.

Hernia.—See *Rupture.*

Hidebound is a result of indigestion, worms, or some cause which contributes to a horse getting thoroughly out of order. His coat stares, and his skin becomes so tight that it is difficult to take hold of on the sides, and the animal appears generally ill at ease. The only thing to do is to ascertain the cause, as hidebound is not a special disease, but a result of something else. (See *Indigestion, Worms.*)

Highland Pony.—See *Garron Pony.*

Hind-legs.—The hind-legs of a horse consist of the thigh, which extends from the back of the flanks and below the croup to the gaskins, or second thighs, which are situated about the hock, whence the cannon bones extend to the fetlocks, pasterns, and feet. The chief joints are the Hip joints which are placed almost on a level with the point of the buttock; the Stifles which are lower down next to the flanks; the Hocks, the Fetlock, and the Pastern. The bone from the hip joint to the stifle is called the Femur, that from the stifle to the hock is called the Tibia, the bones below the hock being similar to those of the fore-leg.

HINGE JOINT—HINGES

The Patella, or knee-cap, is at the front of the stifles where the Femur and Tibia join, the Fibula being a bone which projects upwards at the back of the top of the Tibia, and corresponds with the Ulna of the fore-legs. The Tibia in turn unites with the hock at the Astragalus, the chief bone of the hock, at the back of which is a bone projecting upwards which is known as the Os Calcis, or point of the hock, the minor bones of the hock being situated between the Astragalus and Os Calcis. (1) Tibia; (2) Os Calcis, or point of hock; (3) Astragalus; (4) Cuboid; (5) Cuneiform magnum; (6) Cuneiform parvum; (7) Cuneiform medium; (8) Small Metatarsal or Splint bone; (9) Large Metatarsal or Cannon bone; (10) Sesamoid bone; (11) Suffraginis or Long Pastern bone; (12) Os Coronæ or Small Pastern bone; (13) Os Pedis or Coffin bone; (14) Navicular bone.

Bones of Hind-legs.

Hinge Joint.—A joint in which the protuberances of one bone fit into grooves in another, in such a manner that the joint can only be moved backwards and forwards, as in the knee, and not in any other direction. (See *Ball and Socket Joint*, *Joints*.)

Hinges.—The hinges on all stable doors are best long so as to strengthen the woodwork, but under any circumstances they should be free from any projections which might cause injury to the horse. A periodical inspection of them is therefore necessary, in order that any loose screws or pieces of metal may be detected. (See *Stables*.)

Hinny.—The result of crossing a horse or pony stallion with a she-ass. (See *Bardot, Jennet.*)

Hip Down.—The term applied to the permanent result of a fracture of the point of the hip, which often occurs through a horse's hip coming into contact with a gate or door-post.

Hip Joint.—The joint where the femur or thigh bone joins the *pelvis*. (See *Hind-legs.*)

Hobbles.—It is often necessary, and under most cases it is a wise precaution to adopt, to hobble the hind-legs of

Hobbles.

a mare before she is served by a horse. The accompanying illustration exactly explains the arrangement of a simple yet most effective form of hobble. It consists of a loop round the neck, the ends of the former passing between the fore-legs to the back pasterns, to which they are secured as shown above. (See *Brood Mare.*)

HOLSTEIN STALLION.

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Hobby.—An old description of riding horses and hacks. In some parts of Ireland the word is still in use. (See *Nag*.)

Hocks.—His horse's hocks are a constant source of anxiety to many an owner, as if they are badly formed or by nature weak they may be regarded as being naturally predisposed to fall victims to one or other of the troubles which affect the hock. It is, therefore, essential that apart from their present condition a purchaser should exercise great care in selecting a horse with well-shaped hocks. In the first place, they should be large and clean, by which is meant they should be free from enlargements of any kind. Straight hocks are to be avoided, as they do not prevent concussion and therefore are disposed to develop spavin. When too much bent and lying back they are sure to be weak and generally afflicted by curbs. Cow hocks are those which turn inwards.

There are six bones on the hock; namely, the *Os Calcis*, a long bone which projects upwards at the back and forms the point of the hock; the *Astragalus*, which lies in front of it and joins the tibia; the *Cuboid*, a small bone at the back below the *Os Calcis*; and three flat, cunieforn bones, respectively known as the *Magnum*, *Medium*, and *Parvum*, which lie below the astragalus. (See *Bog-spavin*, *Curbs*, *Sickle Hocks*, *Spavin*, *Sprung Hock*, *Thoroughpin*.)

Hog Mane.—A mane that is cut so short that it stands up erect.

Hollow Back.—A back which is dipped between the withers and point of the loins.

Holstein Horse.—The Holstein is of blood-like character, with plenty of substance and power and particularly good bone. In short, he is a fine-actioned, imposing harness horse, and is also a good weight carrier for saddle purposes. The interests of the breed are watched over by the Union of

Horse Breeders, originally established in 1883 and registered in 1897, whose district extends from Wedel, near Hamburg, to the Eidel river. The clergy did a great deal to establish this breed in medieval times by introducing Oriental stallions, and they are said to have been used by the French in 1822 for heavy cavalry purposes. The Stud Book is under Government supervision; no unsound stallions may serve in the district, and all mares are annually examined, only the very best of either sex being registered, with the result that the breed is notoriously healthy and hardy; over two thousand stallions and five thousand mares are in the books.

Hood.—The part of the clothing which is placed on the head and neck. (See *Bluff, Clothing*.)

Hoofs.—The hoofs are quite as great causes of anxiety to owners as the hocks, and the proper treatment of them is generally misunderstood, whilst to the carelessness and ignorance of farriers many serious troubles are directly traceable. In the first place, it may be mentioned that the hoofs of a horse are not merely solid lumps of horn, as some persons would seem to imagine from the way they treat them, but hollow cases containing very delicate nerves and arteries as well as bones. The so-called leaves which unite the walls of the hoof to the interior parts number many hundreds, and upon their condition depends a great deal. The frog and bars of the feet are also common sources of trouble to the horse owner, as apart entirely to the chances of their being injured accidentally, the vagaries of the shoeing smith are responsible for a great deal. A very common cause of lameness is the reckless manner in which frogs and bars are cut away, and soles pared down, through the ignorance of the farrier and the indifference of those whose duty it is to see that he does his work properly.

Again, the practice of pressing the shoes in a red-hot condition against the hoofs when they are being fitted is

calculated to injure the foot by extracting the oil, and so making the horn brittle; whilst rasping the outside walls to impart a smooth appearance is equally prejudicial to the well-being of the hoof. The latter should be a constant source of care to all who have the charge of horses, and will be much benefited by a periodical dressing of goose grease, or the ointment made out of melted mutton fat, which not only improves the appearance of the walls but promotes the growth of horn. The hoofs should match each other in size and shape, the hind pair being longer and narrower than the front ones, and the latter should be of a good size, and free from blemishes, dark-coloured horn being considered to wear better than that of a lighter shade. (See *Bars, Corns, False Quarter, Foot, Frog, Laminitis, Navicular Disease, Sand Cracks, Shoeing, Thrush.*)

Horn of the Hoof.—See *Foot, Hoofs.*

Horse Shows.—The object of such institutions was originally, and still in many cases undoubtedly is, to aid and encourage breeders in their efforts to produce the best possible horses. Thanks, moreover, to the good work that has been performed during the past quarter of a century by the various horse-breeders' societies, the laudable aspirations of their members have been attended by a very considerable measure of success, which has, however, to some extent been neutralised by the increase in number of the pleasure shows, which are conducted upon purely money-earning principles. At many of these institutions a considerable laxity prevails in carrying out the rules. The appointment of the judges is not always satisfactory to the main body of exhibitors, and entries which fail to give the names and proper descriptions of horses are accepted, the result being a direct benefit to unscrupulous persons, who are enabled to ring the changes to their own advantage. That a properly-conducted pleasure show is of great benefit to breeders, as well as a genuine source of pleasure to exhibitors and the public, there can be

no denying ; but, on the other hand, when a feeling exists that some owners are granted privileges which others are denied, and, above all, when it is known that leading exhibitors and others who are interested in the success of certain animals have a say in the selection of the judges, it is not surprising that the interest taken in such shows is greatly diminished. (See *Breeders' Societies, Weights on the Foot.*)

Horse-sick.—A term applied to pastures which have become soured through having had horses on them for too long. (See *Overcrowding, Pasture.*)

Hospital.—Every stable should have a hospital box, with doors opening outward, so that, in event of sudden illness, especially if the disease is a contagious or infectious one, the patient can be isolated. Such a precaution is not merely necessary for the protection of the other horses, but is of advantage to the patient, as a sick animal requires to be kept quiet. Hence the hospital box should be situated beyond the reach of noises, if it can be so arranged. It should also be spacious and well ventilated ; whilst if it is connected with a room where the attendant upon the sick horse can sit and watch him without disturbing his rest, and if there is a door communicating between the box and the man's room, so that the former can be entered without admitting a draught of cold outside air, the arrangement will be found most beneficial to the sick horse. One danger may result from the hospital box in cases where it has been allowed to stand vacant for a long time, as the fact that it may in consequence have become damp is likely to affect the invalid which suddenly takes possession of it. Therefore it is a wise plan to have the hospital regularly tenanted by a pony, goat, or some other animal, in order that it may be kept thoroughly aired. In all cases, too, it should be carefully disinfected after the sick horse leaves it.

Hot Stables are injurious to the health of all horses, a

temperature of from 50 to 60 degrees, or a little over, being amply sufficient. If properly ventilated, there should be no difficulty in keeping a stable at this heat, but in cold weather the horses may be given extra clothing. (See *Clothing, Cold, Stables, Ventilation.*)

Hovels are the sheds erected in meadows for the shelter of horses which are turned out. These should be fitted with a manger and rack for hay on the same level. It is not necessary to have doors to hovels; on the contrary, they are not only useless, but apt to cause injuries if they swing backwards and forwards. The doorways should also be large and the posts rounded, as sharp corners may cause trouble. Attention should be paid to the state of the ground of the hovel, as the condition into which it is sometimes allowed to get is bad enough to cause disease amongst the horses.

Hub.—See *Nave*.

Humerus.—The shorter of the bones of the shoulder. (See *Bones, Shoulders.*)

Humours.—See *Surfeit*.

Hunter.—The hunter is, or in the opinion of most of his breeders should be, as near a weight-carrying thoroughbred as possible, but as such horses are difficult to find, it is the custom to attempt to produce them by crossing blood-horses with half-bred hunter-mares. As the latter are year by year approaching the thoroughbred more closely owing to the practice of breeding from thoroughbred stallions, it must necessarily follow that the day must eventually arrive when the stock will be practically clean bred, though, of course, not eligible for entry in the General Stud Book. It is, therefore, to be expected that they will display the comparative lightness of bone which is associated with the

blood-horse, and, as a consequence, fail to be up to the weight which they often are required to carry ; and hence the surprise which so many people feel that the hunter breeders of this country should be contented to keep on indulging in the lottery of breeding half-bred horses, when it is within their power, if they so choose, to establish a breed of hunters which are capable of reproducing their own good points in their stock. It is true that there is a feeling abroad in some quarters in favour of the so-called hunter sire, this being a horse that comes of hunter stock on the dam's side and by a thoroughbred sire, but this class of animal, no matter how good-looking he may happen to be, is not generally favoured by British breeders, though foreigners may display their wisdom by purchasing the best specimens which are not wanted in this country.

There can, however, be no two opinions expressed as regards the merits of a thoroughbred as a light-weight hunter, and happily for hundreds of hunting men there is not so very much difficulty in supplying themselves with mounts ; but it becomes a totally different matter when a welter weight has to fill his stable. There is no more valuable horse in the world, with the exception, of course, of a high-class race-horse or possibly a harness animal of exceptional action, than a heavy-weight hunter, and he is every bit as hard to find. No doubt it is easy enough to breed a horse up to any weight, but an ability to carry a heavy man is not the limit of what is required of a hunter by any means. In addition to power, he must possess speed and stamina, cleverness to help him and his rider out of a difficulty, and a heart to carry him through a long day ; and the last-mentioned attribute is just what the heavy-weights with cart blood in them are not likely to possess. The fact, however, that some exceptionally good heavy-weight hunters have come out of cart mares by thoroughbred horses encourages farmers to keep on breeding on these lines, in the hopes that they may, by some fortunate accident, succeed in breeding a horse which will be worth several hundred pounds ; but it is

MRS. FREDERICK COLMAN'S HUNTER FILLY, PRINCESS ROYAL.

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to be feared that the blanks in connection with this experiment so far outnumber the prizes that there is not much, if any, money to be made out of cart blood for hunter breeding, for a heavy weight above all others must possess a heart.

Unquestionably the efforts of the Hunters' Improvement Society have been productive of good results, and there are more high-class hunters produced every year than was formerly the case, but still the improvement is more marked in connection with the light and middle weights than it is with the weight carriers, which are extremely hard to find. This class of horse should possess a good, sensible head, not necessarily a very small one, but not clumsy, a nice, bold eye, a well-balanced neck properly set on long, sloping shoulders, with withers sufficiently up to keep the saddle in its proper place and prevent its slipping forward. The chest must be deep to provide space for the heart and lungs, and moderately broad for the same reason, but still not so broad as to interfere with the speed of the horse. The fore-arms should be big and carry plenty of muscle, the cannon bones short, flat, and heavy in bone, the pasterns long, but not too long, and sloping, and the feet round and fairly large. The back must be short and level, the loins well ribbed up, and the quarters long and level, with big, muscular thighs, nicely bent stifles, and well-developed gaskins, so as to ensure plenty of leverage behind, whilst the hocks must be clean and flat, and the back cannon bones flat and heavy in bone. Above all things the hunter, be he heavy, middle, or light weight, must possess an easy and free action and show good manners. If he is a clumsy mover he will tire himself and his rider out before half a day is over, and if his manners are bad he is a source of trouble to every one about him, as there is no saying what injury he may cause. No doubt some horses with short, upright shoulders, indifferent fore-legs, and other serious defects of conformation have proved themselves good ones across a country, but a real bad-mannered one can never be a source of satisfaction to his rider or anybody else.

For a middle weight, light weight, or lady's hunter a

thoroughbred, or a practically clean-bred horse, will supply all that is required, provided that he is sound ; but in the case of the last named it is a *sine qua non* that his manners should be exceptionally good. Opinions vary a little on the subject of the best height for a hunter, but the majority of hunting men prefer a horse of as near 16 hands as possible. Smaller ones may, as a rule, be cleverer, but size will tell when it comes to galloping ; in fact, in the case of hunters, as in other things, a good big one will always beat a good little one, for he must not only be clever at his jumps, but he must have stride enough to get over the ground.

Hunter Sires.—In the opinion of a great many hunter breeders the only possible sire for the purpose of breeding hunters is the thoroughbred. The correctness of this theory is, however, disputed by plenty of practical men, who see that a system of constantly breeding mares which are full of thoroughbred blood to thoroughbred horses must eventually produce a race of hunters which will be to all intents and purposes clean bred. There would, of course, be no objection to this, rather the reverse, were it felt that such horses would possess the substance required for a weight-carrying hunter, but as this is not the case, and as many breeders whose mares have thrown light-boned, more or less weedy fillies do not care to put these animals to thoroughbred horses, many eligible brood mares are wasted every year, simply because there is no stallion to be found that would suit them. As a consequence, a strong and certainly justifiable impression exists in many quarters that the hunter-bred stallion is worthy of encouragement, and assuming that such animals would be the pick of the colts bred on the lines accepted on all sides, viz., a desirable thoroughbred sire and half-bred mare, the desire that such horses should be utilised for stud purposes is at least reasonable. Meanwhile, the expression hunter sire is an anomalous one, as it is usually applied to a thoroughbred horse which is used for breeding hunters, though it is also used to describe the very few

hunter-bred stallions which are being utilised by breeders. (See *Hunter, Premiums.*)

Hybrids.—The crosses between the horse, on one side, and the ass, zebra, or other animals, on the other. They are invariably sterile, but the mares often secrete a quantity of milk, and cases have been mentioned in which a she-mule has adopted and brought up a foal. (See *Bardot, Jennet, Mule, Mute, Quagga, Zebra.*)

I

Iceland Pony.—A dun-coloured breed, about 13 hands in height, short-legged, strong, and hardy. Many of them

Iceland Pony.

inherit the ambling gait which is preferred on the island, but they rarely, if ever, trot. Professor Cossar Ewart notes that in some districts ten per cent. of these ponies have no chestnuts on the hind-legs, and that in many cases the

absence of chestnuts is associated with a small head, the heads being larger when the callosities are present.

Imagination.—The horse can scarcely be credited with a great amount of imagination in the ordinary acceptation of the term, and, unfortunately, when he does develop the gift, it often takes the form of his seeing some imaginary danger which causes him to shy or try to bolt. There is, however, another form of imagination which is liable to affect in-foal mares, this being the influence exercised upon them by surrounding objects which may be transmitted to their unborn foal. How far this influence may extend there can be no saying, but it is unquestionably the fact that pregnant females can be so affected by what they see about them, or by a sudden fright, that their young come into the world showing the results of the impression their imagination has caused. Doubtless, such cases are comparatively few, but the knowledge that they do occasionally occur should render breeders careful to avoid all chances of their mares becoming scared, and it is likewise as well to prevent their associating with ill-looking specimens of their own breed, lest the latter may influence the appearance of their foals.

Inbreeding.—Beyond all doubt the practice of inbreeding is a valuable assistance to many horse raisers if the principles which regulate it are properly understood, and the experimenter possesses the power of not making too much of a good thing. Assuming that the subject of heredity has been studied, and the breeder has satisfied himself as regards the predominant peculiarities belonging to a particular strain of blood, he is likely to obtain the most satisfactory results by inbreeding, but he ought to know when and where to stop. Otherwise he is liable to injure the stamina and weaken the constitutions of his stock, a great danger being that the mischief may occur before he notices it, the result being that his strain may be affected and all the benefit of earlier experiments thrown away. Probably the

best results of inbreeding are those obtained from crossing members of the same family which are not too nearly related, as these are quite as likely to reproduce the points required as are those derived from the union of very near relations. If, however, a very close cross is to be attempted, better results are likely to attend those resulting from breeding sire to daughter or mother to son, than from the crossing of brother and sister; but it may be repeated that a continued system of inbreeding is calculated to reduce the size, and weaken the stamina and constitutions of the foals produced. (See *Cross-breeding, Heredity*.)

Incisors.—The six front teeth in both the upper and lower jaws. (See *Age*.)

Indigestion may be the result of decayed teeth which prevent a horse from masticating his food properly, constitutional weakness, over-feeding, or other causes. It is usually accompanied by flatulency, loss of appetite, and a general air of discomfort, and should it become chronic will seriously affect the value and working power of the horse.

Treatment.—Give small feeds and more frequently—seven or eight a day, if possible—and reduce the allowance of oats for a few days. Do not give whole oats at all, but let what is given the horse be bruised. Let him have sliced carrots and mangolds in his chop, with bran, chaff, and what corn he gets. Give a more or less mild aperient such as linseed oil, or if there is pain in the belly, some colic mixture, and rub with liniment. When better, a course of tonics is recommended. (See *Prescriptions*.)

Infectious Diseases may be described as those which are capable of being communicated from one animal to another through the medium of germs which float in the air, and not by actual contact. (See *Contagious Diseases*.)

Inflammation may be either acute or chronic, the former form being usually the most serious, and is liable to attack

any part of an animal, including the blood. The principal causes are blows, wounds, poisons, and chills, the symptoms being heat, pain, swelling, and redness, though, of course, a swelling is not present in all cases of inflammation.

Treatment.—In cases where there is an external swelling and heat, relief may be obtained by applying the following lotion constantly on lint which has been saturated in it. Dilute acetic acid 2 ounces, Goulard's extract 4 ounces, water 1 quart; but if the inflammation does not abate, it is best and safest not to delay seeking professional advice. (See *Blistering, Laminitis, Liniments, Medicines, Navicular Disease, Pneumonia.*)

Inflammation of the Bowels, or Enteritis, is one of the most dangerous ills to which horse-flesh is heir, and often kills its victims off in a few hours. The chief causes of an attack are chills, exhaustion through overwork, colic, and indigestion, and it is sometimes succeeded by laminitis, as the inflammation may spread to the feet.

Symptoms.—Shivering, quick breathing, inflamed eyes, pains in the stomach, and frequent motions. As the pain increases the horse becomes very restless, and often rolls to relieve his sufferings, or else walks restlessly about his box. His breathing becomes more affected, and his nostrils dilate, his ears and legs get cold, and he breaks out into sweat; occasionally he screams through pain, and finally collapses.

Treatment.—In cases of inflammation of the bowels professional advice should be sought, but if this is not forthcoming the stomach may be fomented with hot water, and 1 ounce of tincture of opium, or $\frac{3}{4}$ ounce of extract of belladonna, in the case of a full-sized adult horse, may be administered. Should he recover, the patient should not be given grain, but mashes and scalded roots. (See *Medicines, Prescriptions.*)

Inflammation of the Feet.—See *Laminitis*.

Inflammation of the Lungs.—See *Pneumonia*.

Influenza, or Pink Eye, as it is sometimes called, is in its earlier stages similar to an ordinary cold, the symptoms being practically the same. As the attack progresses the fever increases, the mucous membrane of the eye becomes pink in colour, and the patient loses strength fast, becoming in the end so weak that, even if he recovers, he is incapacitated for work for many weeks. Influenza being a disease that is both infectious and contagious, it is absolutely necessary that a horse suffering from it should be rigorously isolated from his stable companions, and that those attending on him should not go near the latter unless their clothing and hands have been thoroughly disinfected, as should the stable he has left.

Treatment.—As for colds; but it is most desirable that professional advice should be obtained with as little delay as possible when the nature of the disease is diagnosed. (See *Catarrh*.)

Inhaling.—An equine inhaling apparatus is a simple contrivance consisting of a sort of small bucket made of metal which is kept in its position by a strap passing from side to side of it and over the top of the head. In order to keep the boiling water it contains from splashing over, some chaff should be placed in the bucket. (For illustration of inhaler see *Bronchitis*.)

Injections are most useful in the case of stoppages of the bowels, and sometimes in connection with attacks of internal inflammation, and they are also useful at times in the treatment for worms. When given hot, as they almost invariably ought to be, their temperature should be about 100 degrees. (See *Enemas*.)

Inoculation is practically much the same thing as contagion, inasmuch as by it a disease can be communicated by one animal to another by contact. In the case of inoculation, however, the result is usually designed beforehand; as,

for instance, when healthy animals are inoculated with the germs of strangles in order to convey the disease to them at a favourable time. The process, if practicable, upon which point there are doubts, is not one to be commended. (See *Contagious Diseases*.)

Insemination is the operation of impregnating mares artificially by the means of a specially designed syringe. It has unquestionably been performed successfully in many cases, and the success which has attended these is likely to popularise the custom amongst the owners of breeding stock.

Inside Car.—(See *Governess Cart*.)

Instinct.—Although a difference of opinion may exist as regards the intelligence of horses, there can be no doubt but that their instinct is strongly developed. The power they possess for finding their way about from place to place, and the ability they show when turned out in strange localities to discover where the best food and water are to be had, prove that many years of dependence upon mankind have not affected their sense of self-preservation. There are, however, exceptions to every rule, and the horse provides one, as his dread of fire absolutely prevents him from using what instinct he possesses to escape from a burning stable. On the other hand, his natural gift of instinct makes a horse extremely careful as to what he eats, and it is next to impossible to induce him to drink water from a filthy or greasy pail, whilst cases of his eating poison are comparatively rare. (See *Brain, Intelligence, Memory*.)

Intelligence is a quality which is denied to horses by a great number of persons who are undoubtedly qualified to express an opinion on the subject. At the same time, it is one upon which ideas differ a great deal, and it is difficult to understand how anybody who has seen a horse lifting the latch of a gate in order to get out of a field can deny him

the possession of, at all events, a certain amount of intelligence. No doubt a horse's brain is, comparatively speaking, small ; but it is unfair, all the same, to stigmatise as a fool an animal which is capable of learning the tricks which circus horses perform every day, especially as it is known that the majority of these accomplishments are due to the promptings the animals receive from their trainers, which fact goes far to prove that they possess the power of profiting by instruction, and therefore must be more or less intelligent. It may be argued, too, on behalf of the horse, that from his first domestication it has been the desire of successive generations of owners to prevent him having any will of his own, and consequently the amount of intelligence he originally possessed cannot fail to have become diminished by absence of use. All dog-breakers unite in the opinion that it is far easier to train a puppy, the parents and ancestors of which have been broken ; and the well-known case of a famous breeder of thoroughbreds who made the experiment of breeding from unbroken mares, and abandoned the practice because the waywardness of his yearlings got them a bad name amongst trainers, may be quoted as showing that the results of not developing latent intelligence are unsatisfactory. Even in his stable a horse has to spend practically all his time gazing at the wall in front of him, if he is in a stall, and as many loose boxes are isolated, and he is not as a rule allowed to look out, he is afforded no opportunity of developing brain power ; whilst out-of-doors the slightest disposition he displays to act for himself is met by correction. It appears impossible, therefore, to deny a horse the gift of natural intelligence ; in fact, all things considered, it is surprising that many members of the equine race are as clever as they are. (See *Brain, Instinct, Memory*.)

Intermittent Lameness is a source of annoyance to most owners at one time or another, as many horses possess an irritating habit of going lame every now and then from some unascertainable cause. In the majority of cases rheu-

INTERNAL ORGANS

matism may be suspected as being at the root of the evil, and efforts should therefore be made to locate the position of the trouble and treat it; but intermittent lameness may also be the beginning of still more serious trouble, such as navicular disease, which see; also *Rheumatism*.

Internal Organs.—The accompanying illustration shows the principal internal organs.

- 1 Brain.
- 2 Septum Nasi.
- 3 Tongue.
- 4 Gullet.
- 5 Windpipe.
- 6 Lungs (showing Bronchial Tubes A A A.)
- 7 Heart.

- 8 Liver.
- 9 Large Intestine.
- 10 Testicles.
- 11 Urethra.
- 12 Bladder.
- 13 Rectum.
- 14 Ureter.

- 15 Small Intestine.
- 16 Kidney.
- 17 Spleen.
- 18 Stomach.
- 19 Spinal Cord.
- 20 Larynx.
- 21 Pharynx.

Inversion of the Uterus occasionally, but not often, succeeds foaling, and if the womb is not replaced in its proper position and kept there the results are likely to be very serious. The replacement is a most delicate task, as not merely is there often a good deal of pain in connection with it, but if carelessly or unskilfully conducted the womb may be injured, with grave consequences, hence the unwisdom of entrusting the duty to a layman. Whilst assistance is being procured the mare will often become very weak, and if so a couple of wineglasses of spirits may be given her mixed in water, and if she lies down and struggles it may be necessary to administer an opiate to soothe her. In event of an attempt being made to replace the womb it will be necessary to get her on her legs if possible, or at all events to raise her behind by placing straw beneath her. The protruding womb should be well washed in cold milk and water—it may be necessary to put hobbles on the mare, and a twitch should always be used—and then raised on a damp sheet to the proper level, when it may be gently pressed up the passage. The greatest skill and care must be exercised in doing so, and if the mare struggles, as she generally will, the attempt must be temporarily suspended until she quieters down. (See *Brood Mare, Foaling.*)

Iris.—The dark-coloured portion of the eye, in the centre of which is the still darker spot known as the pupil. (See *Eyes, Pupil.*)

J

Jaundice.—A very common cause of jaundice is a chill which settles on the liver, but in any case it consists of some obstruction to the passing of bile from that organ.

Symptoms.—The gums and linings of the eyes change in colour from red to yellow, the dung is almost white and smells badly, as does the breath, and the horse becomes

feverish and loses flesh, whilst if the liver is pressed there is very often pain.

Treatment.—Place the horse on a cooling diet, giving him plenty of bran, roots, and green meat, but little or no corn at first, whilst he should be encouraged to drink plenty of water. As a first dose give him 4 ounces of Epsom salts in 1 pint of water, to be followed by 2 drams of ipecacuanha twice a day in a ball, until the yellowness leaves the gums, but not for more than a week. If there are signs of constipation an enema may be tried, and he should have some exercise every day. When better, a couple of ounces of bicarbonate of soda may be mixed with his food for a week or two. (See *Enemas, Liver, Medicines.*)

Jaunting Car.—A name given to the Irish “outside car,” which is a two-wheeled vehicle, constructed to carry four passengers and the driver. The passengers sit two on a side back to back, with their feet on a movable platform outside the wheels, which is so constructed as to turn up if desired. There is also a space between the backs of the passengers for luggage, the driver’s seat being on a dickey in front. (See *Carriages.*)

Jaw.—The jaws of a horse extend from the chin groove to the jowl in the case of the lower one, and from the nostrils upwards in the upper one.

Jennet.—The result of crossing a horse or pony stallion with a she-ass. In America the term is applied to the latter. (See *Bardot, Hinny, Mute.*)

Jibbing is one of the most objectionable habits that a horse can possess, as it consists of his more or less suddenly refusing to move, or, what is worse, in some cases running backwards. This is a serious matter when he has a vehicle behind him, and therefore the first thing to do is to get to his head and hold him. Sometimes then the jibber may be

persuaded to move forward, but as a general rule he decides to stand still without budging an inch. Under such circumstances thrashing him is no good, and even more drastic measures, such as lighting a fire of hay under his belly, frequently fail. Sometimes the offender will be persuaded to move by being turned round, but as often as not he will decline to shift his feet from the ground. A means of compelling him to go forwards which has succeeded in some cases is to saw a piece of rope backwards and forwards behind the knees of a jibber, but this requires the assistance of two persons, and is not always effective, so as a rule there is nothing to do but to wait in patience. Jibbing may therefore be regarded as an incurable vice, though cases of cures have been reported when the offender has been made to stand for hours between the shafts of a cart heavily laden with sand on the place where he commenced to jib, but the value of such an attempt at curing him is very doubtful.

Jinked Back, sometimes erroneously referred to as “chink back,” is not the result of an accident, but is a slow disease of the vertebræ or their muscles. A horse suffering from it can move forwards easily enough, but if quickly turned is likely to fall, and under any circumstances the movement of his hind-legs is defective. There is no cure. (See *Shivering*.)

Joint Ill.—See *Navel Ill.*

Joints.—“Hinge” joints are those which can be extended; “ball and socket” joints are those in which the end of one bone rests in a socket formed by another bone. (See *Bones, Hip Joint, Hocks, Knees, Pastern, Shoulders, Stifle.*)

Journey.—See *Leading Horses, Railway Travelling.*

Jowl.—The part of the lower jaw where it is widest and furthest removed from the mouth.

JUGULAR VEIN—JUMPING

Jugular Vein.—The large vein of the neck which with the carotid artery lies beneath the æsophagus and above the trachea, which see.

Jumper's Bump.—The term applied to the protuberance or rise which appears at the top of the loins of some horses, as a consequence of this formation having been associated with many of the best jumpers. (See *Point of Loin*.)

Jumping.—Most horses possess a natural gift of jumping,

White Rose, property of Mr John Coleman, M.R.C.V.S.

but some take to the work far more kindly than others. At

the same time a judicious course of schooling can accomplish a good deal in the way of transforming a naturally awkward animal into a clever one, at all events so far as show yard performers are concerned. The latter, however, are very often possessed of peculiarities which, though they may not affect a horse's ability to clear obstacles in the judging ring, would render him a very unpleasant hunter to ride to hounds. Some show yard jumpers, however, possess excellent manners, and as the nature of the obstacles they have to clear varies very little at different shows, their natural intelligence enables them to clear fences which they would not be likely to get over in the open. (See *Schooling a Jumper*.)

K

Keep.—A term applied to the grass and other forms of food which grow in a meadow or grazing ground.

Keys.—The pieces of metal attached to the ports of bits. (See *Bits*, *Port*.)

Kicking in the stable is a most objectionable habit for a horse to contract, even if it is only the result of a spirit of playfulness, as it grows upon him. The best course to adopt in such a case is to pad the pillars of the stalls so that he cannot injure himself, and then to fasten some large bunches of furze on them, as the pricking he receives may assist in curing him. Another plan that has been successfully adopted is to strap a small log or ball of wood round the hind-leg above the hock, so that when the animal kicks the ball will hit his cannon bone; and yet another is to suspend a bag of sand from the ceiling behind the horse, in such a manner that when he kicks it it will swing back and hit him on the quarters. Sometimes he will become so sick of this

Kicking-strap and Ball for use in stable.

that he will abandon the habit, but a cure is not often effected.

A horse which kicks in saddle is a constant source of danger to all and everything about him, and is usually—in fact, always ought to be—adorned by a piece of red ribbon on his tail as a warning. The only course for his rider to adopt is to keep his horse's head well up, and apply the whip to his shoulders.

Kicking in harness is usually met by using a kicking-strap, which, in the case of a single horse, consists of a strap which passes through a loop above the crupper and is buckled at either end to the shafts. In pairs a double strap is run from the pad along each side of the crupper and buckled to the splinter bar.

Kicking-strap.—See *Kicking*.

Kidney Link is an oval or kidney-shaped link through which the leather straps of the harness pass.

King's Premiums.—See *Premiums*.

Kink in Tail.—Some horses possess a natural twist in the tail which is most unsightly. The only way to remove it is by docking. (See *Docking*.)

Knee-cap.

Knee-caps are most useful protections for the knees of horses which are sent on journeys by train or steamboat. They should also be worn at exercise if the roads are slippery, and colts, when being broken to harness, should never be without them. They should not be buckled tight above the knee lest circulation should be impaired, and they may be quite loose below the joint, all that the lower strap is useful for being to prevent the knee-cap from getting out of position.

Knee Roll.—The padded projection which extends in front of the flaps of some saddles to assist the riders in keeping their seats. (See *Flap, Saddle.*)

Knees.—The knees are the joints between the fore-arm and cannon bone, and consist of seven, and sometimes eight bones, viz., three flat ones on the top, three on the bottom, and either one or two at the back. The top flat bones, counting from the outside to the inside, are the cunieform, the lunar, and the scaphoid; the bottom ones the unieform, the magnum, and the trapezoid. The pisiform is a bone at the back and outside of the upper row, and is curved to allow space for the tendons of the leg to pass downwards. The eighth bone, which occasionally appears, is called the trapezium, and is at the back of the trapezoid. (See *Bones, Fore-legs.*)

Knots.—The accompanying illustrations represent two knots which every one connected with horses should be able to make. Emergencies so often arise that the ability to

Surgical Knot, for tying sutures, blood-vessels, etc.

Granny Knot, for use in cases of emergency, when harness has to be repaired with cord.

make a non-slipping knot cannot be overestimated, and the power can easily be obtained by carefully studying the illustrations. (See *Stitching Wounds.*)

Knuckling Over.

Knuckling Over is a result of the pasterns becoming straighter through the horse being unable to extend them properly as a result of inflammation caused by concussion or overwork, which has affected the action of the fetlock joint. In mild cases—that is, in those in which the knuckling over is not caused by the formation of bone, but is the result of a sprain through overwork—the evil may be remedied by using a long-toed shoe, and carefully cutting the heels away, so as to cause the sole of the foot to be on a slope from the toe to the heel, which will assist in stretching the ligaments, the free movement of which has become affected. (See *Clean Legs, Fore-legs.*)

L

Lacing.—The term applied to the fore action of a horse which puts his feet down more or less in front of each other, and not straight out before him. (See *Plaiting.*)

Lady's Horse.—The two great essentials in a lady's horse are quality and manners, there being few more deplorable sights than to see an elegant woman on an underbred mount, or endeavouring to restrain the vagaries of a hard-mouthed, vicious brute. The question of substance is therefore not one for much consideration, though some ladies ride pretty heavy, and their saddles are not light; but what is of more importance is a neat head, a nice light neck, long, well-placed shoulders, and good quarters. Of course, the mouth of a lady's horse ought to be perfect, and his action should be easy, and here it may be added that there is a far too prevalent disposition on the part of over-anxious husbands,

parents, and brothers to over-bit the horses of their feminine relations in the desire that the latter should have their mounts well under control. The hands of most women, however, are so light and good that they can manage any horse, excepting, perhaps, a confirmed bolter, and over-bitting is a source of danger in many cases. A breedy-looking, if not clean-bred horse of about 15 hands 2 inches, and good in colour, is what should be sought for, whilst for young girls an Arab is an ideal mount. (See *Action, Park Hack, Riding.*)

Lacing.

Lameness.—Most horse owners have been sorely puzzled at times to detect the cause of lameness in their horses, as the trouble may arise from many sources, such as rheumatism and sprains, which are at first not at all easy to discover. Nor is it always a light task to locate the seat of the lameness, even when a horse is obviously “going dotty” on a leg, and the difficulty of the position is not decreased by the knowledge that some animals suffer from intermittent lameness, whilst others appear to move unsoundly from no reason whatsoever, unless it be for the love of the thing. Nor can it be asserted that every horse which moves regularly is of a necessity sound, as if both fore or both back legs or feet are causing him pain he will move regularly enough, as the rascals who practise the art of beaming are fully aware.

If an animal constantly points one foot when he is standing it may reasonably be surmised that he is not quite sound

on the limb to which it is attached, though, of course, if he is tired he is likely to rest all his feet in turn. As a rule, if the cause of trouble is in the foot he points he will rest his heel on the ground, whilst if it lies in the leg or shoulder he will rest his toe. In a case of shoulder lameness the fore-arm is extended, the knee bent, and the foot with the toe on the ground almost behind its fellow.

As a rule few horses walk lame unless they are the victims of an accident, or theirs is a very bad case, and, speaking generally, a slow trot on hard ground is the best test of the infirmity. The way to proceed is to stand a few yards in front of the horse and watch carefully as he approaches and passes whether he nods his head or dwells upon either of his fore-feet. If he does, it may be pretty safely inferred that the leg which is not associated with these actions is the one which is unsound; while, if he is lame behind, he will be likely to nod his head when the infirm limb touches the ground. If he is lame or tender on both fore-feet his front action will be very short on hard ground, but it will improve on softer ground; hence, if a doubt exists he should be trotted on both. He should be watched carefully from both sides, and also as he is turned quickly first to the off and then to the near, so that it may be seen if he uses both of his hocks in the same manner; if he does not, something wrong may be expected. (See *Intermittent Lameness, Laminitis, Navicular Disease, Rheumatism, Spavin, Splints.*)

Laminitis, or Founder, is [a term applied to inflammation of the feet, which may be the result of concussion, want of exercising, overfeeding, bad shoeing, or various other causes. The fore-feet are usually attacked, and as the evil arises from severe inflammation which has attacked the extremely delicate structures contained in the walls of the hoof, the pain endured is very great. A horse affected by laminitis or founder will often endeavour to throw the weight of his body upon his heels, and in order to do so he will

stretch his fore-legs out, and bring the hind ones under him. Animals with thin soles are the greatest victims of this disease, and usually the front feet are attacked, but occasionally the hind ones as well. When a horse stands in the position referred to, and is visibly suffering, whilst his temperature is rising, laminitis is to be feared, and suspicions become confirmed if there is a difficulty in making him back, and he shows signs of increased pain when one of his feet, which will be burning hot, is raised up from the ground.

Laminitis—Pointing.

Treatment. — Having removed the shoes, the horse should be stood on soft bedding, such as peat moss or sawdust; some authorities recommend cold bran poultices, but these may not be necessary in mild cases, and in very severe ones the patient may be placed in slings. The bowels should not be allowed to get constipated, and food should be of a cooling nature, such as mash, carrots, clover, and the like, whilst plenty of water may be given whilst the fever lasts. The feet may be kept cool by the constant application of cold water or ice, and if an aperient is necessary $1\frac{1}{2}$ pints of linseed oil may be administered. When better, the wall of the hoof may be lowered so as to bring the weight on to the heels, and he may be shod light with bar shoes, gentle exercise being good for him. (See *Bar-shoe, Hoofs, Sponge Pad.*)

Lampas, which particularly affects young horses, is the name given to a swelling on the roof of the mouth, which causes a good deal of pain and prevents the horse from eating. The cause may be a chill or indigestion, but lampas

is not a serious affair, and relief will be obtained by lancing the swelling and keeping the sufferer on a diet of mash and soft food, no grain, for a few days. One ounce of bicarbonate of soda may be given, divided amongst the mashes, for three days, by which time the horse should be better.

Lamps.—The best of all illuminating powers are the old-fashioned candles which are specially manufactured for carriage lamps. Oils of any sort are dirty, and frequently smell offensively, and acetylene gas also possesses a bad odour. The reflectors and glass of lamps should be carefully cleaned and dried afterwards.

Landau is a carriage made to carry four persons in the body, and is fitted with leather hoods to fall back and front, so that it can be used as an open or closed carriage. The first one was made in Landau, a town in Germany, from which it takes its name. It is made in two shapes—with a canoe- or square-shaped body. The square shape gives the most convenient and roomy seating accommodation in the body. The landau can be hung on either C. or elliptic springs.

Laryngitis.—Inflammation of the larynx is usually caused by exposure to cold, wet, or damp, either in or out of a stable, and not infrequently attacks young and highly-fed horses when they are first put to work, and animals which come out of over-heated stables into cold ones. If not taken in time it may end in an attack of pneumonia, or cause the horse to become a roarer, and therefore a case should not be neglected.

Symptoms.—A nasty dry cough, great thirst, and loss of appetite. The horse becomes feverish, and a painful swelling appears under the throat.

Treatment.—Place the horse in a warm but airy box, clothe him comfortably, and bandage his legs. Owing to

the soreness of throat, which is often great, it is difficult, even if it were wise, to give him medicine, but he may be made to inhale the vapour of hot water, either in a plain state or that to which some opium or iodine has been added. Foment the throat with hot water applied by means of hot cloths, and during the intervals of fomentations apply either linseed poultices, or tow which has been soaked in hot oil. (See *Inhaling, Larynx, Nursing, Prescriptions.*)

Larynx.—The opening connecting the back of the mouth with the trachea, the movements of which control the voice. (See *Internal Organs.*)

Laxatives are the forms of foods or medicines which act mildly upon the bowels. In the former, amongst others, are included apples, bran mash, carrots, clover, grass, gruel, linseed tea, parsnips, turnips, sanfoin, vetches, etc., which see, also *Medicines.*

Lead.—See *Poisons.*

Leading Fore-leg.—See *Canter.*

Leading Horses.—When horses are being led along the road they should be taken along on the off side so as to meet any approaching vehicles on the latter's side of the road, and should always be led close to the curb. This arrangement, however, is not practicable in crowded thoroughfares, but is the safest and best one all the same, as it prevents the horse being frightened by a conveyance which may suddenly come up close behind him. (See *Exercise, Rule of the Road.*)

Lean Head is one in which the muscles, blood-vessels, and bony protuberances show up distinctly. It is also neatly formed and its skin is fine.

Leaping.—See *Schooling a Jumper.*

Length of a Horse.—Opinions differ as regards the parts from which a horse's length of body should be measured, and certainly there must always be a difficulty in taking it, as the most prominent part in front, namely, the point of the shoulder, is not in a straight line with the point of the buttock, which projects out furthest behind. The method, therefore, of measuring from the point of the shoulder in a straight line to the back of the buttock below the point is the best that can be adopted.

Let Down.—A horse is said to be let down when his ribs are long so that he possesses a considerable depth of chest.

Level Action is an action in which all the different joints work together harmoniously, with the result that the feet are put down smoothly in their proper places. (See *Action*.)

Liberty.—A horse is said to show liberty in his action when he moves with freedom, using his shoulders well and getting over the ground with freedom. (See *Free Action*.)

Lice.—Aged horses, and those kept in dirty stables or turned out on foul land, are subject to these pests, which are sometimes communicated by poultry.

Treatment.—A dressing of sulphur ointment or paraffin will usually succeed. (See *Ticks*.)

Licenses.—For all vehicles excepting those used *bona fide* for the purposes of their owner's business (in which case they must not be used for any other purpose, and have his name and address painted on them) a license must be paid on the following scales:—four-wheeled carriages, to be drawn or adapted to be drawn by two or more horses, £2, 2s.; four-wheeled carriages, to be drawn or adapted to be drawn by one horse, £1, 1s.; two-wheeled carriages, 15s.; hackney carriages, 15s. A license of 15s. has also to be paid for each male servant kept, irrespective of age. (See *Armorial Bearings*.)

Ligaments.—The white tissues which hold the ends of bones together.

Light is beneficial to all animals, and to none more so than the horse. Consequently, a dark stable is to be avoided. (See *Stables*.)

Light Horse.—The description applied to the less massive varieties of horse, such as the hackneys and hunter. (See *Nag*.)

Lighting Stables.—The ideal light for stables if an installation can be arranged is electricity, as it is clean, not too heating, easily turned on, and safe if care is exercised in laying the wires. Then comes gas; but there is always the danger of a careless man dropping a match when lighting a burner, or of an escape, the results of which might easily be serious. If lamps are used they should be lighted by candles, as oil lamps are an ever-present source of danger, and if overturned may lead to the destruction of a range of stabling and its occupants.

Limestone.—See *Soil*.

Liniments may be described as outward applications which are used as counter-irritants in case of inflammation. They are not so powerful as blisters, and are therefore adapted for use in the preliminary stages of injuries and colds. (See *Blistering*.)

Linseed is one of the most useful things to have in a stable, as in one or other of its forms it can be advantageously used for many purposes. Linseed oil is a very safe laxative medicine, and it also acts upon the kidneys. The best way to obtain linseed oil is to make it at home, as it is often adulterated before coming into the purchaser's possession. The way to make it is to put 1 lb. of linseed into 1 gallon of water and let it stand for a day, stirring it now and

then. At the end of that time it will be a thick, glutinous mass which, though it may not be exactly oil, is a first-rate thing for a horse to take in water, or with his food or mash. Linseed meal is the basis of the effective poultices which are used in the case of various diseases. Linseed tea is often given to sick horses with beneficial results, and is made by boiling 1 lb. of linseed until it is perfectly soft, and then adding enough warm water to make up about 6 quarts or more. (See *Feeding, Poultices, Restoratives.*)

Lips.—The lips of a horse should be thin and kept closed, a drooping under lip, in addition to being unsightly, being often associated with an absence of courage.

List.—See *Eel Mark*.

Litter.—See *Bedding*.

Liver.—Some horses suffer from their livers, but, happily for themselves, not to the extent that mankind does. The causes of attack are usually want of work, overfeeding, and ill-ventilated stables; but a horse brought from a temperate climate into a hot one is likely to have his liver affected. A derangement of the liver can easily be detected by the colour of the droppings, which are always pale, and very offensive in their smell, whilst there is usually a quickened pulse.

Treatment.—Avoid heating diet, such as grain, for a time, and give plenty of green food and bran mashes. Administer 8 ounces sulphate of magnesia in 3 pints of water, to be followed by $1\frac{1}{2}$ drams of ipecacuanha twice a day for a week, with 1 ounce of sweet spirits of nitre at night for a week. After that give him 2 ounces a day of bicarbonate of soda, which can be divided between his feeds, for another week, by which time the liver should be in proper working order again. (See *Jaundice*.)

Lock.—This is the part of the under carriage which

allows for the turning of the front wheels. It is divided into three distinct degrees, known in the trade as half lock, three-quarter lock, and full lock. The first implies that the wheels will lock only half-way round; the three-quarter lock, that the wheels will go only three-quarters of the way round; and in a full lock the wheels pass right under the body. The degrees of the lock are provided for by a locking-stop welded into the wheel plate.

Lockjaw may be the result of a chill when heated, a wound, especially in the region of the foot, the presence of worms or bots, or other causes. It is a most serious source of trouble when it appears, as fatal results may always be expected, but it is not infectious, although it can be communicated from one animal to another by means of any pus which may discharge from a wound, and therefore precautions should be taken to isolate the patient, and to thoroughly disinfect the stable and any utensils he may use, whilst his bedding should be burned.

Symptoms.—The neck becomes stiff about a fortnight after the source of the trouble, whether it be a chill or an injury, occurs; then follows a difficulty in eating, this being followed by the locking of the jaws and stiffness of the limbs, the tail very often being carried high. Spasms of the muscles are frequent, the breathing becomes difficult, and the horse breaks out into a sweat.

Treatment.—As the least excitement is liable to bring on spasms, the patient should be kept as quiet as possible, no one being allowed to come near him unless necessary. Soft-cooked food, such as mashes and green stuff, may be given him, if he can eat it; if not, he must be drenched with gruel. Let plenty of water be within his reach, and clothe him warmly; whilst bad cases may be slung in order to avoid injuries when the spasms occur. The professional attendant will probably prescribe some soothing medicines, but absolute rest and quiet affords the best hope of a recovery. (See *Medicines, Slings.*)¹

Lofts over stables are often the cause of trouble with horses' ears and eyes, owing to dust and particles of forage getting through the crevices of the floor; and under any circumstances they create dust and cause the horses' coats to become dirty. When possible, therefore, it is best to keep the forage in some other place than a loft, and, excepting in cases where space is valuable, the absence of a loft is all in favour of the horses, as the stable is more airy and healthier without one. (See *Stables*.)

Loin Cloth.—A rainproof cloth which is fixed over the loins of light harness horses which have to stand about in bad weather.

Loins.—The loins of a horse are situated above the flanks between the back and the croup.

Long Hay is hay which is of the same length as when the grass was mown, such as is contained in trusses or in the stack. (See *Feeding*.)

Look Out.—The term applied to the expression of a horse's face combined with formation of head.

Lop Ears.—Ears which are not carried erect, but project at each side of the head, are thus described. By some they are associated with a dull, sluggish disposition, but this idea does not invariably apply, though lop ears are unquestionably unsightly.

Lorry.—A heavy, four-wheeled dray without sides to it.

Losing Flesh.—When horses begin to lose flesh, the presence of worms may be suspected, but sometimes the trouble may be due to debility or indigestion. In any circumstances every care should be taken to ascertain the cause, else a valuable life may be lost. (See *Debility, Indigestion, Tonics, Worms*.)

Lucerne is a very good form of green food for horses, but too much of it ought not to be given to any animal doing fast work. (See *Feeding*.)

Lungeing.—The act of lungeing a horse consists of making him trot round in a circle in the centre of which his attendant stands with a long rein in his hand, the end, of the rein being fastened to the horse's bridle or cavesson. (See *Breaking, Cavesson*.)

Lungs.—The lungs are the two large, reddish-coloured spongy masses situated next to the heart and covered by the pleura. They expand or contract through the action of the diaphragm. (See *Breathing, Internal Organs, Pneumonia*.)

Lurry.—See *Lorry*.

Lying Down.—All horses in work should be encouraged to lie down and rest themselves properly, and for this purpose a proper bed should be provided them, and the stalls should be at least 6 feet wide for a big animal. It is not necessary, excepting in the case of those which are extra tired, or have to work at night, that their beds should be beneath them all day, as there is no necessity for their lying down in the daylight. (See *Rest, Sleeping Standing*.)

Lymphangitis.—See *Monday Morning Evil*.

M

Macadam.—Taken all round there is no road so good for horses to travel over as a well-kept macadam one, though it may not succeed in conforming with the anticipations of its inventor, who hoped that the constant pressure of traffic passing over his roads would produce the effect of uniting the flints into a mass of solid stonework which would practically never wear out. The worst of macadam paving is that

MAIL PHAETON—MAIZE

it has need of constant supervision, as once a hole is formed it rapidly develops into a rut, or nasty place, which may prove a source of inconvenience and danger to men and horses passing over it.

Mail Phaeton is a driving phaeton of a very high grade, hung upon a perch carriage and mail or platform springs,

Mail Phaeton.

similar to the springs of a mail-coach. It has always a solid panel driving seat in front, which is fitted with a leather hood, and has a seat behind for servants.

Maize, or Indian Corn, has of recent years come to be used as a food in many stables which it never was allowed to enter previously. No doubt the high price of oats and proportionate cheapness of maize was the cause of this, but of late the latter has cost more. Given as a food it is apt to cause purging at first, but this soon wears off and the horses begin to put on flesh fast. Maize is not, however, a muscle-producing form of food, and is rather of a heating nature, and therefore it should not be given in large quantities to horses which have hard work to get through at a fast pace, and it never can be accepted as an adequate substitute for

oats. The London General Omnibus Company and other large employees of horses, however, serve out a daily ration of maize, mixed, of course, with other foods, but when given it should always be cracked. (See *Feeding*.)

Make.—See *Conformation*.

Making.—See *Schooling*.

Mallenders consist of cracks which appear in the skin at the backs of the knees, as a result of the horse lying down with his hind shoes rubbing against the part of the fore-leg which is affected. They are preceded by a good deal of scurfiness and roughness of the hair, and if not taken in time will grow deep and cause a good deal of trouble and a permanent blemish, owing to the flesh thickening and becoming hard.

Treatment.—Opening medicine and cooling diet to reduce any heat of the blood and tendency to fever; wash the cracks once with soft soap and warm water, and apply daily an ointment of burnt alum 60 grains, red oxide of mercury 20 grains, well powdered, lard 7 drams. (See *Sallenders*.)

Mallender.

Manchurian Pony.—This is an extremely useful though very slow pony which stands about 13 hands high or a little over. Amongst the good points of this breed may be mentioned a very robust constitution, surefootedness, and exceptionally good legs and feet, which qualities doubtless influenced Lieutenant Shackleton when he decided upon taking some Manchurian ponies with him in his voyage to the South Pole. The breed is somewhat heavier in build

than the ordinary run of Far Eastern pony, but on the other hand the Manchurian possesses unusually good shoulders, and is, therefore, well adapted for riding purposes.

Mane.—The mane, if unhogged, usually falls over the off side of the neck, but it can easily be trained to hang over the near side by using weights of tinfoil or some such thing, and in the case of cavalry horses it is the custom to do so, as it enables a rider to assist himself in mounting if he can catch hold of the mane. In the case of polo ponies, which are almost invariably hogged, it is usual to leave one tuft of hair for this purpose. A mane should never be cut; the way to thin it to attractive proportions is to comb it away from the under side; and it may be added that the roots of the hair on the side it falls over are not infrequently allowed to get into a very dirty condition owing to grooms acting on the principle that the scurf which accumulates there will never be seen.

Mange exists in at least two forms amongst horses, and is caused in either instance by the presence of an insect which burrows down under the skin. It is a most contagious disease, and no doubt many cases are due to horses on a journey having temporarily occupied stables which have previously been tenanted by an affected animal.

The symptoms of the commoner form usually appear in the tail and mane, whence it spreads to other parts of the body. Scabs appear on the bare patches from which the hair falls off, and discharge a fluid which will readily convey the disease to other animals. As a consequence, a horse which suffers from mange should be isolated, and all the woodwork of the stall he has occupied must be thoroughly disinfected and the litter burned, else an epidemic of mange is likely to run through the stable.

Treatment.—If taken in time a dressing of paraffin oil once a day for three or four days may be useful, though a paste composed of linseed oil six parts, tar oil one part, and

kerosine oil one part, mixed with flowers of sulphur to form a thick paste, may be preferred. (See *Lice*.)

Mangers should always be made of either iron or hard wood ; otherwise the horses are apt to gnaw them, and may thereby contract the evil habit of crib-biting, whilst wooden ones cannot be properly cleaned out after a mash, and therefore are liable to become sour. The manger ought also to be wide enough to enable a horse to eat out of it comfortably, and sufficiently deep to prevent him wasting his food by pushing it out with his nose.

Mangolds do not form an ideal form of food for high-class horses, though the latter like them, and therefore as an occasional change they may be given. When so they should be sliced small and mixed with the allowance of chop. (See *Feeding, Swedes, Turnips*.)

Manners not only make a man, but a horse as well, as no animal can be regarded as really valuable for any sort of work which does not readily obey the will of the person controlling him, and do so in a graceful, willing style. No doubt the natural disposition of an animal exercises a good deal of influence upon his manners, but good breaking, good schooling, and good horsemanship are responsible for their share. Conversely, bad breaking, bad riding or driving, and bad biting will ruin the best manners in the world. (See *Biting, Breaking, Schooling*.)

Markings at one time were matters to which far more importance was attached than is the case at present. Of late years, and particularly in connection with the hackney, a superfluity of white is tolerated which a generation ago would have taken many pounds off the value of a horse. As a consequence, high honours in the show ring are bestowed upon hideously marked animals, disfigured by white patches on the belly or sides, white lips, and other similar disfigure-

ments which no owner of a well-turned-out equipage would countenance for an instant. Chestnuts are by far the greatest offenders in the way of bad markings, the old adage of "One white leg, buy him; two white legs, try him; four white legs and a white nose, cut his throat and throw him to the crows," being ignored by the vast majority of modern hackney judges. A white heel, or perhaps two, may be passed in a chestnut, but when the white runs up above the hocks, and the star on the forehead increases into a hideous, irregular blaze down the face, no self-respecting man who takes a pride in his carriage would give the possessor of such markings stable room. A little white on the heel of a bay is tolerated, but it does not improve the value of a horse, and a star on the forehead is not a serious subject for objection as a rule, but the correct thing in the case of bays is black markings up to the knees and hocks, whilst, of course, the mane and tail must be black. In Clevelands, black, zebra-like stripes often appear on the thighs and are not objected to, whilst there is frequently a dark stripe, or list or eel mark, running the length of the back from the withers to the tail. This list is also to be seen in some varieties of ponies, notably Exmoors and their descendants, and is regarded as a proof of the correctness of the theory that the horse and ass sprang from the same root. (See *Blaze, Colours, Eel Mark, Snip, Star.*)

Martingale.—A standing martingale is a strap fixed to the nose-band and passing through the breast-plate between the legs to the girths, the object of its use being to prevent the horse throwing his head up and to give his owner control of him. Hunting martingales have double reins, each terminating in a ring which is run along either the curb or snaffle-rein, there being a check at the cheek so that the rings cannot get over the bit. A Cheshire martingale is used with a breast-plate, to which it is connected, whilst its two other ends are fixed by spring hooks to the rings of the snaffle-bit.

MASHES—MEASURES

Mashes.—The benefit of a mash to a sick horse is often very great ; and even animals in work are none the worse for

Martingale and Breast-plate.

one the night before their rest day. It is not desirable, however, to give a mash to a horse which is going out in the morning, as the tendency of this form of food is to loosen the bowels. To make a bran mash, heat a pail with warm water, empty it and put in 3 lbs. of bran and 1 ounce of salt ; mix, and pour over it a little over 1 quart of boiling water, stir, cover over with a sack, and stand for twenty minutes. (See *Nursing, Restoratives.*)

Meadow.—See *Pasture.*

Measures (Corn).—

2 quarts . . . = 1 pottle.	4 bushels . . . = 1 sack.
2 pottles . . . = 1 gallon.	2 coombs or
2 gallons . . . = 1 peck.	8 bushels . . . = 1 quarter.
4 pecks . . . = 1 bushel.	4 quarters . . . = 1 chaldron.
2 bushels . . . = 1 strike.	5 quarters . . . = 1 load.
4 bushels . . . = 1 coomb.	2 loads or 10 qrs. . . = 1 last.

Measuring.—See *Height*.

Medicines.—Considerable knowledge and a great deal of care are necessary when horses have to be physicked successfully, not merely as regards the actual administration of the drugs, but through the difficulty that exists in ascertaining the nature of an attack and prescribing the proper remedy. It is often necessary, too, that two or more drugs should be contained in a prescription, and as these must be carefully weighed in order to ensure their proper proportions only being made up, some skill and experience are required to carry out what is necessary, and delicate scales must be used for the purpose. Above all, the utmost vigilance has to be exercised when poisons are being dispensed, especially in the case of those of which the action is cumulative and which have to be administered in frequent doses, as a mistake of even the fraction of a dram may lead to most serious results. Excepting in straight away cases, therefore, where the symptoms are clear and the treatment simple, it is always the best and wisest course to pursue to procure professional advice, and it will usually be found that this is cheapest in the long run. At the same time, it must frequently occur that the services of a competent veterinarian are not always available at a moment's notice, and then something must be done for the patient pending his arrival, whilst it may be added that some owners and stud grooms possess a considerable medical knowledge, and so can temporarily treat the horse successfully. On no account, however, should ignorant persons be allowed to measure out medicines, to act on their own responsibility, or to open the stable medicine chest or cupboard. This is a most important order for a master to issue, as some people, and these are usually the most ill-qualified to handle drugs, possess a mania for physicking horses.

The stable medicine chest should be kept in an accessible place; a cupboard in the harness room is the best of all, as the temperature of this apartment is usually even, and it is

never damp. The cupboard should always be kept locked, and the key should be entrusted to the care of some responsible person, such as the stud groom's wife, who is not likely to leave the premises for long, as deaths have occurred in a stable before now owing to the person who had the key of the medicine chest having gone off with it in his pocket. Finally, all poisons should be kept in a box or on a shelf by themselves, and in bottles or jars of different shapes and colours to those containing less dangerous drugs, so as to lessen the chances of mistakes occurring at times of excitement.

In a work of this sort it would be impossible to find space for a list of all the drugs which are useful in combating equine diseases; but the following are those most often used, and it is well to keep a stock of them on the premises, especially as they may assist the professional man in prescribing for his patient temporarily in cases of emergency.

It may once more be urged upon the reader that SOME of the following medicines are POISONS, and therefore that CARE MUST BE EXERCISED when using them.

ACETATE OF LEAD.—Useful for stopping hemorrhage of the lungs, or as an external dressing for galls. *Dose, ½ to 1 dram.*

ACETIC ACID.—A useful addition to certain cooling lotions.

ALOES.—The best and safest purgative. *Dose, 2 to 8 drams*, as a purge; *1 to 2 drams*, as an alterative.

ALUM.—Assists in checking diarrhœa, and externally as a dressing for wounds. *Dose, 2 to 4 drams.*

AMMONIA (Hartshorn).—A useful febrifuge.

ANISEED.—Useful in cases of indigestion. *Dose, 1 to 1½ ounces.*

ARNICA.—An excellent application for sprains and bruises.

BELLADONNA.—Dulls pain, and is applied as a liniment to cases of rheumatism and irritation of the skin. This should not be administered internally excepting under professional advice, it being a poison.

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BICARBONATE OF POTASH.—Useful in cases of indigestion, and sometimes of rheumatism. *Dose, $\frac{1}{2}$ to $1\frac{1}{2}$ ounces.*

BLUESTONE.—Assists by outward application in healing some kinds of wounds.

BORIC ACID.—Used as a dressing for wounds, in the proportion of *1 part to 20 parts of water.*

CAMPHOR.—Used in liniments.

CARBOLIC ACID.—An excellent disinfectant; can be used as a dressing for cleansing wounds in the proportion of *1 part to from 20 to 30 parts of water.*

CARRAWAY SEED.—A useful stomachic when used with other drugs.

CARRON OIL.—The best dressing for scalds or burns.

CASTOR OIL.—A powerful purgative, and speedy in its action. *Dose, 10 to 30 ounces.*

CHALK, Precipitated.—Assists in checking diarrhœa.

COLLODION.—Used for painting over fresh wounds to keep out the air.

EPSOM SALTS.—A mild purgative which acts on the kidneys and liver. *Dose, 2 to 4 ounces.*

GENTIAN.—Useful in cases of indigestion. *Dose, $\frac{1}{2}$ to 1 ounce.*

GINGER.—Useful in cases of colic or flatulency. *Dose, 2 drams to 1 ounce.*

GLYCERINE.—Useful for application to cracked heels.

GOULARD'S EXTRACT (Lead).—Cooling lotion for eyes: *15 grains to 8 ounces of water.*

IODIDE OF MERCURY, Red.—Useful as a blister for splints or bone spavins in the proportion of *1 part to 8 parts of lard.*

IODINE, TINCTURE OF.—Useful as a mild dressing for incipient splints, and the treatment of some skin diseases, such as ringworm.

ODOFORM.—Most useful as a dressing for wounds.

LANOLINE.—Useful for dressing cracked heels.

LINSEED OIL.—A mild aperient, and soothing in its

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effects. *Dose*, 10 to 20 ounces, or a couple of tablespoonfuls may be given daily in the horse's food.

NITRATE OF POTASS, NITRE, or SALTPETRE.—An excellent remedy in cases of fever. *Dose*, 2 to 8 drams.

NITRE, SWEET SPIRITS OF, or SPIRIT OF NITRIC ETHER.—Useful in cases of fever, colic, and chills. *Dose*, 1 to 2 drams.

OPIUM or LAUDANUM.—Useful in attacks of colic or diarrhœa. *Dose*, $\frac{1}{2}$ to 2 drams.

STOCKHOLM TAR.—A useful stopping for feet.

SULPHATE OF IRON.—Useful in cases of weakness. *Dose*, 1 to 2 drams.

SULPHATE OF ZINC.—Useful as a dressing for drying up wounds.

SULPHUR, FLOWERS OF.—Useful internally as a blood purifier: and, when mixed with lard, as a dressing for skin troubles.

TURPENTINE, OIL OF.—Used in cases of colic; a good remedy for worms. *Dose*, $\frac{1}{2}$ to 2 ounces.

TURPENTINE, SPIRITS OF.—Are useful for *outward* application in cases of colic, if sprinkled on cloths steeped in boiling water.

NOTE.—The maximum doses referred to above are those applicable to an adult horse of full size, and they must therefore be reduced to proportions sufficient for less powerful animals, as given below. It may also be pointed out that, in referring to drugs, it is not intended to suggest that they can in every instance be used unmixed with others. As a matter of fact, in the case of many diseases, two or more of them are contained in a dose. (See *Prescriptions*.)

SURGICAL APPLIANCES.

The following list of very simple appliances—so simple, indeed, that they scarcely justify the prefix “surgical”—should always be at hand for immediate use in cases of emergency:—*Bandages*, woollen and linen; *cotton wool*, plain and antiseptic—the latter can be made by soaking

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cotton wool in boric acid ; *gduze*, for placing over wounds underneath the cotton wool ; *lint* ; *needles*, for stitching up wounds ; *scissors* of different sizes, with long, thin blades ; two or three clean *sponges* ; some *silver wire* for stitching up wounds ; *syringes*, for injecting water and disinfectants into wounds. It is absolutely necessary that all the above should be kept in a dry place, and scrupulously clean.

It is most desirable that a horse should get no corn for twenty-four hours before he is physicked with a purge, the best things for him being bran mash and hay, the latter in small quantities. The physic should be administered early on an empty stomach, and a bran mash or some thick gruel may be given soon afterwards. Later on he may be given an hour's gentle exercise, and on his return he should be given a pailful of hot water to drink ; in fact, the more of this he takes until the medicine works the better. After the physic is well out of him and his droppings become dry again he can begin with small feeds of corn and chop. Should the dose not work the horse, it is best not to give him a second one for at least a week. Aloes work some horses very slowly ; in fact, it often requires twenty-four hours before they take effect, and hence the unwisdom of overdosing the patient.

PROPORTION OF DOSES.

According to Age.

5 years old and over	.	.	.	.	.	Full dose.
4 "	.	.	.	.	.	$\frac{3}{4}$ "
3 "	.	.	.	.	.	$\frac{2}{3}$ "
2 "	.	.	.	.	.	$\frac{1}{2}$ "
Yearling	.	.	.	.	.	$\frac{1}{3}$ "
Ponies less in proportion.						

According to Height and Bulk.

15-hand 3-inch light horse	.	Full dose.
Heavy cart-horse	.	$\frac{1}{4}$ more than full dose.
14-hand pony	.	$\frac{1}{5}$ less " "
13 " "	.	$\frac{2}{5}$ " " "

MEGRIMS—MEMBRANE

Apothecaries' Weight.

20 grains	.	.	.	.	= 1 scruple.
3 scruples	.	.	.	.	= 1 dram.
8 drams	.	.	.	.	= 1 ounce.
12 ounces	.	.	.	.	= 1 pound.

1 sovereign weighs *about* 2 drams.

1 florin " " 3 "

1 shilling " " 1½ "

1 tablespoonful of fluid = *about* 1 ounce.

1 dessertspoonful " = " ½ "

1 teaspoonful " = " ¼ "

NOTE.—The two last tables above are only approximately correct, and should NOT BE USED for weighing or measuring poisons or powerful medicines.

Megrims is a brain trouble arising from a defect in the circulation of the blood, and generally attacks horses when at work. Overfeeding is sometimes responsible for an attack, and so is over-exertion after feeding, though it may safely be assumed that megrims will not appear in a horse whose brain is in a healthy state.

Symptoms.—A constant shaking and high carriage of the head, unsteadiness in action, followed by a fall to the ground. If left to himself the horse will probably be able to get up in a little time, but he will be dull and heavy for a while, after which he will appear to have quite got over the attack.

Treatment.—Throw cold water over his head, loosen the throat latch, and, if possible, remove the collar and bridle. A horse which is subject to frequent attacks of megrims may be regarded as incurable, for his brain will be more or less diseased. As harness horses are the commonest sufferers they are dangerous to their owners.

Membrane.—A thin and delicate but strong tissue which covers the cavities of the body. Thus the mucous membrane

lines the air passages, and the serous membrane the joints and abdominal cavities.

Memory.—However greatly opinions may differ regarding the intelligence of a horse, no one who knows the equine race is likely to deny it the possession of a most remarkable memory. Most owners have a personal experience of the extraordinary aptitude a horse displays for finding his way home along a dark road, even though he may only have travelled along it once or twice; and cases innumerable have been reported of horses remembering their old stalls in a stable from which they have been absent for years. Still more defined is a horse's memory of a place at which he has been pulled up, the habits of many a servant having become known to his master through his horse's disinclination to pass the man's favourite houses of call, owing to his having been stopped at them before. (See *Brain, Instinct, Intelligence.*)

Metacarpal Bone.—The cannon bone of the fore-leg.

Metatarsal Bone.—The cannon bone of the hind-leg.

Mice should never be permitted to exist in a stable, as sooner or later they find their way into the corn bin, and long before that they get amongst the hay. Not only do they consume a good deal of grain, but they spoil far more than they consume by their evacuations, and hence a reliable cat is a necessity in every stable. (See *Cats.*)

Midriff.—See *Diaphragm.*

Mildew is one of the most common of the parasitic fungi which appear on growing grain or plants. It takes the form of dark spots, which eat their way into the plant and turn the part attacked into a black powder. (See *Bunt, Ergot, Mouldy Forage, Rust, Smut.*)

Milk.—A mare's milk is not so rich as that of a cow but it contains more sugar, therefore in event of it becoming necessary to bring up a foal on cow's milk, the latter should be diluted with water in the proportions of about three parts of milk to two of water at first, and a little sugar must be added. After a while less water may be added if it is thought necessary, but it is desirable that milk from the same cow should always be provided, as a change may tend to upset the foal. (See *Foaling, Milk Food.*)

Milk Food.—The advantages of milk food are much apt to be overlooked by horse owners, but in the case of shy feeders, sick horses, and young animals, such a diet is well worth trying. Of course, no one could expect to feed a horse in hard work on such a food, but when a jaded appetite has to be tempted, the benefits to be derived from milk are great. There is, however, both a difficulty and a certain amount of risk in procuring milk, as it should always be of the same quality and absolutely pure, for if it is not the latter it is impossible to know what is being given to the horse. There should be a good demand, therefore, for a dried milk food of a reliable quality, such as that which is sold and specially prepared by Spratt's Patent, as by using it owners can estimate exactly the amount of nourishment they are giving their horses. In the case of foals, when cow's milk is given, two parts of water to three of milk with a little sugar added may be given. (See *Feeding, Foals, Restoratives.*)

Milk Teeth.—The first set of teeth the foal cuts. These teeth are smooth, and show no grooves in front. (See *Age.*)

Misfit is a term applied to a well-bred but bad-looking horse.

Mixture is the term that is often applied to a chaff composed of hay, clover, sanfoin, or vetches. (See *Chop.*)

Molars.—The back teeth, situated behind the bars of the mouth. (See *Age, Incisors.*)

Monday Morning Evil, as its name—it has several, by the way—implies, is usually a result of a Sunday's rest, which causes one or both of the hind-legs to swell to a great size, accompanied by a good deal of fever. Very often the attack is preceded by shivering, but it always comes on with more or less suddenness. The pulse is usually fast, the bowels constipated, and the urine scanty. The swollen limb is most tender to the touch, and a number of creases form at the heel, whilst the animal is very lame—in fact, can scarcely put his foot on the ground.

Treatment.—Clothe the horse warmly and give a purge, stopping his allowance of corn and feeding him on mashes and other cooling food. The swollen leg should be constantly fomented with hot water to reduce the pain. On no account blister, but if considered necessary apply a mixture of belladonna and glycerine to the leg. One ounce of nitre may be given every day for a week, and the horse should be well rested. After an animal has experienced one attack he is always likely to suffer again, and therefore he should always be carefully fed and duly exercised if not at work. (This disease is also known as *Lymphangitis* and *Weed*.)

Moorland Ponies.—See *Dartmoor, Exmoor*.

Morgan Horse.—An American breed of horses descended from one stallion named Justin Morgan, foaled 1793, died 1821. Thoroughbred blood is supposed to have predominated in him, and his descendants, though not the fastest trotters, are most good - tempered, pleasant, and hardy roadsters. They bear the wear and tear of the road remarkably well, but do not average more than from 14.2 to 15 hands in height. One of his descendants was Vermont Black Hawk, a horse which has produced some of the handsomest and best-gaited trotters of modern times. It is said

in America that his blood is being lost, and efforts are now being made to resuscitate the race.

Moss Litter.—See *Bedding*.

Mouldy Forage is not merely a non-nutritious but a most dangerous food to give a horse. Special care should therefore be taken to avoid using it, as unprincipled vendors are not above mixing damaged stuff with sound, in order to deceive their customers. (See *Feeding, Hay, Inflammation, Oats.*)

Moustache.—The tuft of hair which appears on the upper lip of some heavy horses, and is regarded as a proof of underbreeding.

Mouth.—The position of this portion of a horse's anatomy is, of course, obvious, but the term possesses a peculiar meaning of its own, as it has come to be associated with the amenity a horse displays to the control of the bit. A fine mouth is a sensitive mouth which readily yields to the touch of the rider's or driver's hand; a hard mouth is one which is callous, and uninfluenced by the bit. As a rule, a bad or hard mouth is the result of bad breaking and over-biting. (See *Bits, Biting, Mouthing.*)

Mouthing is the process of discovering the correct design of bit that suits a particular horse the best, and accustoming him to the use of it. A careless or ignorant person can easily ruin the sensitive mouth of a horse by making him wear a severe bit, which, though it may control his restiveness for a time, eventually renders him indifferent to the pressure it causes, and hence constitutes him a very real source of danger to those about him, as he is liable to get out of control at any minute. (See *Bits, Biting, Breaking, Mouth.*)

Mud Fever is similar in some respects to cracked heels, only that the seat of the trouble is the belly. It is a very

painful disease, and although not exactly a dangerous one, is quite serious enough to lay up a horse for some time should the attack be a bad one.

Symptoms.—The belly becomes very hot and sometimes swollen; the coat on it stares, and if it is touched the horse shows signs of pain. The skin under the hair on the belly becomes rough, and an eruption appears, which if not treated will develop into sore places and bring off the coat. Mud fever is always associated with a high temperature, and generally with lameness, or an inability to move with any freedom even at a walk.

Treatment.—Give a mild dose of physic and feed on mashes and green food to reduce the fever, and dress the belly with a mixture of glycerine four parts, and Goulard's Extract one part, which will generally prove effective. Prevention is, however, always better than cure, and therefore it may be observed that mud fever is produced by the hair of the belly being wetted. Consequently, it is a most unwise practice to wash the mud off the coat of a horse, as it is far better left to dry on after the worst of it has been removed by wisping. (See *Heated Horses*.)

Mule.—The result of crossing an ass stallion with a horse or pony mare. All mules and hybrids are sterile, and consequently no importance should be attached to the statements which refer to known cases of a mule having produced a foal. These have been, doubtless, made under some misconception, probably owing to the pony or horse which bred so strongly resembling a mule in appearance, as some do, that a mistake occurred. (See *Bardot, Hinny, Hybrid, Jennet*.)

Muscles may be briefly, and unscientifically, defined as fibres, attached to one bone which can be moved and another that is fixed by sinews, which by their contraction or expansion regulate the movements of the joints. The longer the muscle, the greater is its power to contract or expand,

and hence the greater speed is obtained where the animals possess long and thin muscles. On the other hand, where strength rather than speed is required the muscles are short but thick, the amount of muscle an animal possesses being dependent upon his bone, as unless there is bone for the muscles to be attached to, it is obvious that they cannot exist, as there would be no place for them. Every part of the body which moves is influenced by the action of muscles ; for instance, the head is stretched forward and brought back into its usual position by muscles which are connected with the poll and the neck and poll and the withers, whilst it is bent by muscles which stretch from the lower jaw to the breast bone. The shoulder blades are connected with the trunk and head by muscles, and the fore-legs to the shoulder and breast bone by muscles likewise. The muscles which control knee action are attached to the front of the humerus, or lower bone of the shoulders, and those which bend the pastern and lower joints of the limb are fixed to the back portion of the same bone. The stifle is influenced in its movements by one muscle attached to the pelvis, and by two connected with the thigh bone, whilst the hock is extended by those connected with the back of the gaskin. The lower joints of the hind limbs are moved by muscles which are respectively connected with the stifle joint and gaskin, the former, which extends down the front of the leg, being responsible for the extension of the limb, and the latter, which are situated at the back, for its contraction.

Mustard is an invaluable thing to have at hand for use in cases of emergency, as it forms an excellent counter-irritant in cases of colic or sore throat. Equal parts of mustard and linseed meal mixed in cold water make a good poultice when the latter by itself may not be regarded as quite strong enough. (See *Linseed, Poultices*.)

Mute.—See *Bardot, Hinny, Hybrid, Jennet, Mule*.

Mutton Fat.—Sound mutton fat chopped up fine and placed in a jar on the hob or in the oven until melted provides, after it has cooled, a most excellent ointment for application to the hoofs of horses, as it assists in supplying any absence of oil and promotes the growth of horn on the walls and soles. (See *Brittle Hoofs*.)

Muzzle.—The part of the head which includes the nostrils, lips, and the bones, gums, and teeth covered by the latter.

N

Nag.—The expression "nag" is still applied in many parts of the country to horses of the lighter breeds in order to distinguish them from the cart and heavy draught varieties. No doubt it is derived from the old Anglo-Saxon word *lnegan*, to neigh.

Nails.—It is necessary, though many shoeing smiths do not appear to think it is, for the heads of the nails to fit the holes in the shoes properly, but it is unnecessary to use a heavier nail than is absolutely required. The front nails of a shoe should penetrate the horn of the hoof about 1 inch, the hind ones not so far. (See *Clinches, Pricks, Shoeing*.)

Nap.—A slang expression referring to the act of a horse which refuses to go forward, but suddenly swerves, or attempts to bolt out at a gate or out of the road or course he may be on.

Narrow Behind.—A horse is said to be narrow behind when his croup and thighs are deficient in muscle, so as to give him a narrow appearance when one stands behind him. (See *Split Up*.)

Nave.—The nave of a wheel is the wooden centre from which the spokes radiate towards the felloe. (See *Felloe*.)

Navel Ill.—This is an unfortunately by no means uncommon, though it is a most fatal disease amongst foals. The cause of an attack is believed to be blood poisoning through the entrance of some noxious germs into the wound caused by the rupture of the navel string at the time of birth, but cases are known in which a young animal has been attacked whose navel cord had been healed for some time. It is worthy of attention, too, that the young stock on some land are far more susceptible to attacks of navel ill than those belonging to a stud a few miles away; a fact which is worthy of the attention of breeders.

Symptoms.—As a rule the foal is seized during the second or third week of its existence, the first symptoms being dullness, accompanied by fever and lameness. If examined, a soft swelling will be found on one of the joints, possibly on more than one, and this is invariably very tender and there is considerable heat, and a tendency to suppurate.

Treatment.—If not attended to at once the death of the foal from the effects of blood poisoning is likely to occur within ten days, but in most cases the prospects of a fatal termination are considerable. The affected joints should not be poulticed or fomented, but should be dressed with biniodide of mercury one part, and lard eight parts. The question of medicine must depend upon each individual case, as sometimes the bowels are constipated and sometimes not. (This disease is also known as *Arthritis, Joint Ill*.)

Navicular Bone is situated on the back of the hoof below the short pastern bone and above the pedal bone. (See *Fore-legs, Navicular Disease*.)

Navicular Disease is chiefly to be found amongst horses

which do their work on the roads, and usually commences at the spot at the back of the foot where the tendon passes over the navicular bone. It only appears on the fore-feet, and usually amongst horses with contracted heels and upright pasterns, which are naturally more affected by concussion than better-shaped ones are; but no doubt bad shoeing is responsible for its share of cases.

Pointing the Toe—a case of Navicular.

Symptoms.—The horse commences by pointing his toe with the tip on the ground, so as to get the weight of his body off his heel, thus acting in a manner exactly contrary to that adopted in cases of laminitis. The symptoms of lameness appear when he is

trotted on a hard road, and he often stumbles, especially when going down a hill. The foot is very sensitive, though not particularly hot, and gives the appearance of shrinking in size.

Treatment.—Remove the shoes and pare away the walls of the hoof so as to allow the frog to come down on the ground. Apply cold poultices at first, and then keep the horse standing on damp clay, the litter of his night box being of moss litter, or some such cooling substance. When better, the coronet should be blistered, and then the horse may be turned out for a month or three weeks on ground that is soft and damp. In obstinate cases it may become necessary to perform the operation of neurotomy, but this is not to be recommended if it can possibly be avoided. (See *Blistering, Clay Bedding, Hoofs, Laminitis, Neurotomy, Sponge Pad.*)

Near Side.—The left side of a horse or road.

Neck.—The neck of a well-bred horse should be of good length and thin, if he belongs to one of the lighter varieties, whereas that of a heavy draught horse should be massive and powerful. As regards size, the proportions of the neck should depend to some extent on the sort of head the horse carries, an insignificant-looking head being as much out of proportion to a heavy neck, as a heavy headpiece would be upon a slender one. A horse with the proper length of neck can more easily save himself if he stumbles than a short-necked one can, and is, generally speaking, the more active, pleasant ride; whilst few short-necked animals possess the speed of the longer-necked ones. (See *Crest, Erve Neck, Rein.*)

Neck Strap.—A strap that is worn in the stable round the thin part of the neck instead of a head collar, in the case of horses which have acquired the trick of slipping the latter. A neck strap, too, is recommended as a possible preventative of crib-biting, but its value is, to say the least of it, very doubtful. If used in place of a head collar a brow-band should be added. (See *Brow-band, Crib-biting.*)

Nervous System.—It must be apparent to all who possess any practical experience of horses that the nervous system of some animals is far more developed than it is in others. Nor can there be any room for doubting that the nervous system exercises a very decided influence upon the action and speed of a horse, the high-spirited, excitable animal being almost invariably a more showy actioned one than the horse of even temperament, which plods along entirely unaffected by its surroundings. This is because the former is by nature the better able to transmit the effects of the spirit which animates them to their muscles, and hence display more life and freedom in their movements. (See *Action.*)

Net.—A light cord net, attached to the bridle in such a manner that when the reins are pulled it will tighten over

his nostrils, is sometimes placed over the muzzle of a hard puller in order to check him.

Nettle Rash.—See *Surfeit*.

Neurotomy is an operation which involves the cutting through of a nerve, its object being to relieve the horse from pain when he is worked if he is suffering from diseased limbs. It should not be performed upon a horse which has thin or bad feet, and it may be added that the effects of the operation are not invariably permanent, owing to the ends of the nerve where it was cut reuniting after a time. Neurotomy causes numbness of the limb below the point where the nerve was severed, and hence there is always some risk attached to riding, or driving in a light vehicle, a horse that has been operated on, as the loss of the sense of feeling in the feet may cause him to place them on something which may bring him down.

New Forest Pony.—A breed of ponies has been cultivated in this district for centuries; indeed, the records of the Exchequer show that payments were made by the Crown for their sustenance as far back as 1166. Unfortunately, like all the other ancient breeds of British horse, the New Forest pony has suffered a great deal from the effects of injudicious crosses introduced by well-meaning, but foolish persons as improvements. Some fifty years ago Arab blood was tried with fairly satisfactory results in some cases, so far as the production of a serviceable working pony was concerned, but the old type was practically lost. Thoroughbreds had, however, been used long before that period, one of the stallions which served in the district having been Marske, the sire of Eclipse. The New Forest ponies of the present day vary a good deal, but the average height is a liberal 13 hands; they are good gallopers and jumpers, though many are inclined to be goose-rumped. They for the most part have

very good legs and feet, whilst the Arab type of head is not uncommon amongst them.

Nicking.—The object of this operation, which is to make a horse which carries his tail down and close to his buttocks, carry it upwards as he should do to look well, is not by any means so common now as it used to be. It consists of cutting a slit on the lower part of the tail about a couple of inches from the body, and dividing the side muscles, so that those which raise the tail shall have no opposition from the muscles which depress it. In severing the latter care must be taken to avoid dividing the artery of the tail, and it is necessary to bandage the wound and keep the tail in an upward position and straight, lest when it heals it may be on one side. The bandage should be loosened the next day in case the swelling which supervenes should produce inflammation. The operation, however, is not one that should be entrusted to anybody but a properly qualified veterinary surgeon. (See *Docking*.)

Norfolk Trotter.—See *Hackney*.

Norwegian Horse.—See *Swedish Horses*.

Nose.—The position of a horse's nose should be as nearly as possible in a straight line with his forehead. (See *Roman Nose*.)

Nose-band.—The part of the bridle which encircles the head above the nose. In the case of hard pullers a second and more tightly-fitting nose-band is attached to it in such a manner that on the reins being pulled hard it presses on the nostrils and checks respiration, thus assisting the driver in stopping the horse.

Numnah.—See *Saddle-cloth*.

Nursing.—As in the case of mankind, so it is in that of horses, a good nurse is always a most valuable ally of the professional attendant in cases of sickness, and occasionally the more important of the two. Hence the immense worth of a thoroughly reliable stable hand, who can be depended upon to keep his eye throughout the night upon a sick horse, and attend gently to his patient as directed. Some men possess a perfect faculty for nursing, and this often seems to be recognised and appreciated by their charges, who allow them to do almost anything with them. Above all things nursing, to be efficacious, should be gentle and persistent. This does not imply that a sick horse should be constantly bothered by unnecessary attentions, but rather that his wants should be attended to regularly, and with as little noise, fuss, or inconvenience to himself as possible. A careless man will enter the box hastily and leave the door open, thus admitting a current of cold air which may seriously affect the invalid. He will forget that the animal is in pain and handle him roughly, or may intentionally disturb him to see if he is going on all right. The gruel may be all in lumps, the hay tea or bran mash made of tepid instead of boiling water, or the poultices may be cold. Fomentations or hand-rubbing may be carelessly applied, or shirked altogether, medicine may be carelessly measured or not administered at the proper hours; in fact, a score of things may be done or left undone which may cost the sick horse his life. Unfortunately, too, it sometimes happens that a man who in other respects is an ideal nurse, is the possessor of ideas of his own, and therefore secretly drugs his patient, or treats him in other ways according to his own judgment, and in opposition to the instructions of the veterinarian in charge of the case. This sort of man is hopeless, as his zeal overrides his obedience to orders, and he cannot therefore be trusted, as, unfortunately, if he is found out, it is usually too late. In short, a sober, kindly-hearted man who can be relied upon not to go to sleep and neglect his charges, and who can be depended upon to do as he is told

and carry out the instructions given him to the letter, is an almost priceless blessing to a horse owner, by whom he should be appreciated as his merits deserve. (See *Hospital*.)

O

Oats.—Care should be exercised in the selection of oats, as unless they are of good quality they are not of much use to the horse, and though they may cost less money to purchase, they are usually the dearest in the end. Good oats should be short and plump-looking, with thin skins and the less beard the better, and should weigh 42 lbs. to the bushel. Old, that is, second year oats, if well harvested and in good condition, are preferred to new ones, but they should be genuinely old, it being a practice of some dealers to sell their customers kiln-dried oats instead of grain which has been properly harvested, as the process of kiln drying makes them look as though they possessed age. "Foxy oats," which have a musty taste owing to their having undergone the process of heating by being dried in bulk, are a bad food in every respect for a horse. The colour, whether white or black, is immaterial so long as the grain is sound. (See *Feeding*.)

Obedience.—All those who come into contact with a horse, either as rider, driver, or groom, should be master of the animal. Unless they are so the horse's instinct soon teaches him that he possesses the upper hand, and his manners and steadiness will suffer. It is not, however, necessary to thrash a horse unmercifully to render him obedient, though a cut or two of the whip will do him good if he displays an inclination to be obstinate. Of course, there are cases of savageness in which very drastic measures are necessary, but in the majority of instances patience and firmness will accomplish more good than severe punishment. (See *Breaking*.)

Occipital Crest.—The protuberance on the top of the head between the ears. (See *Poll*.)

Odd Feet.—The term applied to two fore-feet or to two back feet which differ in size or shape. (See *Foot*.)

Off his Feet.—A horse is said to get off his feet when he breaks from a trot into a canter. (See *Action*.)

Off Side.—The right side of a horse or road.

Oil Cake is an abominable food for horses unless the object of their owner is to feed them up for sale or exhibition with the object of concealing faults in their conformation. Of late years it has become a far too common practice amongst those who breed for the market or show young stock to feed their animals upon cake as though they were bullocks, but the stock so forced usually turn out badly. A little oil cake, however, is allowable in the case of a horse which is changing his coat, provided he is not doing hard work.

Oldenburg Horse. — Horses have been bred in the Oldenburg district since 1603, when Count Anton Günther ruled the principality and owned twelve hundred horses. In 1897 the registrations that then existed were formed into one society ; previous to that date breeding operations were controlled by a Stallion Election Committee, founded in 1820. The Oldenburg horse is a big, strong, and elegant carriage animal of a sound, good bay, brown, or black colour ; they mature early, are very robust, and in many points closely resemble the English hackney horse.

Ophthalmia is an inflammation of the membrane of the eye, and is usually the result of dust or some other irritating substance getting under the lid, or a cold may bring it on.

Symptoms.—Redness of the eyes, which water a good

OLDENBURG STALLION.

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deal and appear dim, whilst the horse evidently dislikes a strong light.

Treatment.—Give cooling medicine, keep the horse in a darkened box, and apply a lotion of sulphate of zinc one grain, water half an ounce. If the symptoms continue, professional advice should be secured. (See *Eyes*.)

Orloff Horse.—This is beyond all doubt the best and most fashionable of the light horse breeds of Russia, and, generally regarded, may be said to possess a strong resemblance to the English hackney, with which it should cross well. The Orloff is a descendant of Eastern blood, the corner-stone of the breed being a Barb, Smolenska, owned by Count Alexis Orloff, from whom the variety takes its name. Grey and brown are the principal colours met with amongst the Orloffs, which are remarkable for their speed, trotting blood having been introduced into the strain many years ago; on the other hand, though many of them are good movers, they do not show extravagant action as a general rule.

Orphan Foals.—See *Foals, Milk Food, Weaning*.

Os Calcis.—The point of the hock—that is, the part which projects at the back of the joint. (See *Hocks*.)

Os Pedis.—See *Bones, Coffin Bone, Fore-legs*.

Osteoporosis.—See *Big Head*.

Outside Car.—See *Jaunting Car*.

Overcrowding is a source of frequent loss to breeders who forget that their land can only carry a certain number of horses. Not merely do pastures become sour if overfed and never given a rest, but a number of horses run on a limited area usually do badly even if there is sufficient keep for them. Consequently, it is the better policy for breeders

OVERHEAD CHECK REIN—OVERLOADING

to keep their studs down to reasonable limits, even if by doing so they may part with a good horse at a low price, than to incur the risk of raising a number of middling animals. (See *Breeding Studs, Horse-sick, Paddocks, Pasture.*)

Overhead Check Rein.

Overhead Check Rein.

— A single rein which passes from the cheek, or is attached to the bridoon, if one is worn, up the forehead, and between the ears to the pad hook. (See *Bridoon, Pad.*)

Overloading.—It is an undoubted fact that many horses are killed annually, and at least twenty times as many ruined, by being overloaded. It is not always the weights they have to draw that break them down, but the rate of speed at which they are worked, for a horse can get through a good deal if not forced to move beyond a reasonable pace. Possibly the hardest worked animals in the country are the omnibus horses, a pair of which travel some 16 miles a day at an average speed of 7 miles an hour with something like 4 tons behind them when the conveyance is full. This is pretty hard work for light horses, when compared with the 9 or 10 miles a day at about 2 miles an hour of heavy draught horses. Much, of course, depends upon the state of the ground or roads over which they are worked, but horse for horse the members of a team which are worked at a fair pace will last longer and do their work better than those which perform exactly the same duties at a faster rate of speed, in spite of the fact that the latter get more rest in the stable. (See *Distress, Foot Pounds, Restoratives.*)

Overreaches are bruises caused by the hind-foot striking a fore-leg, and they are generally the result of the inner edge of the hind-toe hitting the front leg on the coronet or back tendon.

Treatment.—This must, of course, depend upon where the seat of the injury lies, but prevention being always better than cure, the hind shoe should in future be cut away at the toe, so as to reduce the chances of it striking the one in front.

Overreach.

Overworking.—See *Overloading*.

Oxygen.—The administration of oxygen to horses as an incentive to endurance has for some time past been recognised by some horse owners, and more recently the belief in its merits has gained ground. A special and very simple apparatus has been designed for administering it; but though the practice may be beneficial, it is possible that it may be prohibited so far as race-horses are concerned. (See *Doping*.)

P

Pace.—The question of pace is one which deserves the serious consideration of both owners and servants, as a truer maxim never existed than that which lays down the fact that “it is not the miles we travel, it is the pace that kills.” It is essential, therefore, that every horse should, as a general

rule and emergencies excepted, be worked at his own pace, for not only do different breeds, but different members of them, possess their own limits of speed. This undoubted fact is, however, far too often lost sight of by owners of so-called match pairs, who appear to be quite content if their horses are similar in make and colour, though they ignore the question of their relative speed altogether. The result, of course, is disastrous so far as appearances are concerned ; in addition to which, the faster horse not only gets more than his fair share of work, but is perpetually being worried by having his mouth pulled at, whilst his slower companion, though he may be doing his honest best, is constantly feeling the effects of the whip, as he is regarded as lazy by a driver who has not recognised that the pair do not match in speed. Again, in the case of single horses, assuming that two animals are given the same weight to draw, the one that is hurried over it to such an extent that he is systematically driven beyond his natural rate of speed will knock up far sooner, in spite of the fact that, owing to his having got his work done sooner, he has had more time in the stable every day. (See *Overloading*.)

Pacing.—A horse is said to pace when he moves the two legs on the same side simultaneously, and proceeds in a curious swinging style. The pacer, horse for horse, is faster than the trotter, and the mile record of America is held by a horse which moved in this ungainly fashion, which, however, is an easy one for the rider. (See *Amble, Trot*.)

Pack Horse.—It must regretfully be admitted that the old pack horse is now a thing of the past, and hence the necessity of treating briefly with one of the most valuable and attractive of the ancient breeds of English horses. At the same time, the merits of the variety were so great that it deserves a passing tribute of recognition, and an expression of regret that the horse-breeders of Devonshire should have allowed the pack horse to become extinct. Before railways

were extended all over the country these horses were largely used for carrying provisions and other necessities to the inhabitants of outlying districts, and since those remote days some of the most famous trotters of the west country were of this breed, conspicuous amongst them being a famous bay, named Cottager. In appearance the pack horse somewhat resembled the hackney—of which he probably is an ancestor—but he possessed a neater head. This is possibly due to the fact that he was a descendant of the Eastern stallions which were extensively used over three centuries ago for crossing with native mares. The principal colours were bay, black, and brown, the height varying from 15 hands to 15 hands 3 inches, or a little over.

Pad.—(A) The pad is the part of the harness which fits on the back a few inches behind the withers. In the top centre is the pad hook, to which the bearing-rein can be attached, and on either side of this are terrots for the reins to pass through. At the back the pad is attached to the crupper, which prevents it from slipping forward. (See *Harness*.)

(B) The term applied to a piece of leather or india-rubber which is fixed between the hoof and shoe of a horse and covers the sole of the foot so as to protect the frog and bars. (See *Lameness*, *Sponge Pad*.)

Pad Cloth.—A cloth which is sometimes worn under the pad for ornamental purposes, or in cases of sore backs. (See *Harness*.)

Paddocks.—All paddocks and pasture land in which horses are turned out should be sufficiently watered so that the animals can drink at pleasure. If there is no pond or water-hole, water should be supplied in a large tub, which should be constantly refilled and cleaned out regularly. If the latter matter is not attended to as it ought to be, the health of the horses is likely to suffer through their drinking impurities, as it is by no means an uncommon occurrence

for a rat to get drowned in the horse's water tub. Paddocks for breeding stock are best when they possess good hedges to shelter the foals from the wind, and, if possible, they should be on undulating land, so that from their earliest days the young animals may move over sloping as well as level land, and thereby develop their muscles to the utmost. The size of a paddock must, of course, depend upon the number and size of the horses kept in it, but there should always be a shed or hovel for them to shelter and be fed in. (*See Breeding Studs, Overcrowding, Pasture, Summering, Turning Out.*)

Pails.—Metal pails are not so good as wooden ones for stable purposes, as there is a chance of their injuring a horse if he should happen to strike his leg against their sides. (*See Bucket.*)

Pairs.—The difficulty that is experienced in finding a pair of good-looking, high-actioned horses which match in all respects is so great that sums which far exceed the double value of a single animal are readily forthcoming for the pair. To be a real match the shade of colour, as well as height, shape, action, carriage, and pace should match exactly, but it is far easier to describe what is wanted than to procure it. As a rule, more well-matched pairs are to be found amongst Cleveland bays and Yorkshire coach-horses than in other breeds, as the question of colour and markings causes little or no trouble. (*See Pace.*)

Panel.—The panels of a saddle are the stuffed parts underneath the seat which come in contact with the horse's back. (*See Saddle.*)

Paralysis is not a form of disease to which horses are very liable, but when it does appear, it usually attacks the hind-legs of animals of mature age which have done a good deal of fast work. It comes on gradually, the back action of the victim becoming affected more and more by degrees,

until at last the movement of the legs is so impeded that the horse can scarcely get along.

Treatment.—The chances of a cure are very remote, but the progress of an attack may be retarded by keeping the horse in a warm, comfortable box, and on a cooling diet. The following may be given as a ball twice a day. Strychnine $\frac{1}{2}$ grain, iodide of iron 1 grain, treacle sufficient to mix. (See *Jinked Back, Shivering.*)

Park Coach.—See *Coach*.

Park Hack.—A certain amount of blood is regarded by most people as essential in a park hack, though in many cases the descendants of thoroughbreds possess a highly-strung, irritable disposition. They, however, show quality, and if their manners are all that could be desired there can be no better horse to ride. Much, however, must depend upon what weight the park hack is required to carry, for whereas a young rider who only rides 12 stones or thereabouts is likely to be well suited by a breedy, blood-like mount, the elderly gentleman of substantial proportions requires a long, low, powerfully-built, short-legged horse, of absolutely perfect manners. In every case, however, the manners of a park hack should be perfect; and his shoulders ought to be long and well laid back so as to ensure his being a pleasant horse to ride. Any approach to high or fighting action is objectionable, and of course his legs and feet should be sound and well made, and his quarters long and level. Naturally, too, his back should be level, but a saddle covers a multitude of sins, though it does not conceal tucked-up loins, which in any case are unsightly, and in the case of an old gentleman's weight carrier a source of weakness. It is essential, moreover, that the last-mentioned class of horse should be a good walker, not only a true-actioned but a fast one, as elderly riders rarely patronise the trot or canter. The best colours are bay and brown, as chestnuts, especially those of a light shade and disfigured by exaggerated white

markings, are too gay in appearance for park work. About 15 hands 3 inches is the correct height, but a weight-carrying cob of 15 hands is quite allowable. (See *Lady's Horse*.)

Park Team.—As may be supposed, more quality is required in a park than a road team, and a great deal more attention is paid to the matter of appointments. Nor are conspicuous colours and gaudy markings favoured in a park team, but style, manners, and action are subjects of the greatest importance. Hence the predilection in favour of hackney blood which is displayed by some owners of very attractive teams, but as bay is the most favoured colour, it is not an easy matter to procure well-matched wheelers standing 16 hands and leaders an inch less at shoulder. Yorkshire coach-horses are favoured by many driving men, and a few support Cleveland bays, but the latter are a little heavy, and in instances plain, for this particular class of work. (See *Appointments, Coach, Road Team*.)

Parsnips are well liked by horses and form a good change of food, especially when mixed with corn and bran in the case of the heavy breeds. If given cooked they should not be overboiled. (See *Feeding*.)

Pastern.—The part of the leg which lies between the fetlock and the hoof; it consists of two bones, the long and the short, which act in conjunction with the navicular bone. (See *Fore-legs*.)

Pasture.—The expressions “pasture,” “paddock,” and “meadow” mean pretty much the same thing, though the term paddock has come by use to be applied more generally to small enclosures. In each case a supply of good water is a matter of necessity, and the grass should be both plentiful and of good quality. It is a bad plan to keep light horses on wet land, as this influences the quality of their bone, but the heavy breeds, the bone of which is not so fine and hard

in texture, do well upon it, and their growth of hair is increased. For the accommodation of young horses level land is not so suitable as that which undulates, as the ups and downs assist in bringing all their muscles into play, which is a matter for consideration in the case of race-horses and other animals which are required for fast work upon all sorts of tracks and roads. Attention to the grass is always necessary, especially if the land is carrying many horses, as the keep is likely to become poor and lose its nutritious qualities if neglected. A periodical rest, if possible, will improve the keep immensely, but if this is not possible for a long enough period to give the grass a chance, a good rolling in the early part of the year will do good. It should be remembered, too, if the land is to have a top dressing, that care should be exercised in the selection of the same, as some dressings are not as applicable as others for the purpose where horses are concerned. (See *Breeding Studs, Horse-sick, Paddocks, Summering, Turning Out.*)

Patella.—The bone which is placed in front of, and acts as a cap for, the stifle joint.

Paving Stables.—See *Floors, Stables.*

Peacock.—A horse is described as peacocky if he is narrow and “flash-looking”; in fact, the sort of animal whose appearance attracts the unwary, but will not bear criticism and picking to pieces.

Peas are a very nutritious form of food for horses in hard work, provided that they are sound and at least a year old. Shrivelled-up peas, or those perforated by insects, are not merely non-nutritious, but they are injurious to health. The allowance of peas, moreover, should always be limited, and, as a rule, should not exceed one-fifth of the weight of the other grain composing the feed. (See *Beans, Feeding.*)

Peat Moss is a very useful, though not particularly

attractive-looking form of litter when straw is scarce, but it is more adapted for use in summer than in winter. In cases where horses eat their litter it often prevents a good deal of trouble, though inveterate offenders have been known to devour even their peat moss bedding. Before being used it must be carefully broken up small, and any drains which it can penetrate should be stopped up, as otherwise they will become choked, and as the moss absorbs all moisture this will not interfere with the healthiness of the stable. (See *Bedding*.)

Peck.—(A) A term used to denote the act of stumbling.
(B) See *Measures*.

Pedal Bone.—The bone of the horse's foot known as the coffin bone. (See *Foot*.)

Pegs.—See *Frost Nails*.

Pelvis.—The large bone of the croup.

Penis.—The organ of sex of a stallion or gelding.

Perch is that part of the under-carriage which extends from the fore to the hind part of a C. spring carriage, holding the back and front part of the running gear rigidly together. It is necessary in C. spring carriages to have a perch, otherwise there would be no connection between the hind and front carriages, and they would come away from the body as soon as the horses began to pull. The perch was made of wood, plated with iron or steel, but for the sake of lightness of appearance they are now made of steel. They are made in two forms, straight and crane-necked, the latter having an arched curve just behind the fore-carriage to allow the wheel to pass under it, giving it a full lock.

Percheron Horse.—This breed originated in France, and, though never very popular in England, has made its mark

on the American market for draught horses. They are said to have been introduced to France by the Crusaders on their return from the Holy Wars, but Eastern, Arab, and English thoroughbred sires were certainly crossed with them at a later date. The light weights are bred in Normandy and used as trotters, but the heavy draught variety is found near Manier Sault Crome and Forte Bernard ; the latter are generally grey in colour, and rather resemble the Suffolk horse in conformation ; they are not heavily feathered, and in England carry a reputation for bad feet and softness. Still, they are fair weight pullers, and possess both good tempers and manners.

Pericardium.—The bag which encloses the heart.

Periosteum.—The membrane which envelops the bones of the body except where cartilage exists in the joints. (See *Cartilage, Membrane.*)

Peritoneum.—The membrane which lines the abdominal cavity, enclosing the contents. (See *Membrane.*)

Phalanges. — The three principal bones of the fetlock and foot—namely, the two pastern and the coffin bones.

Pickaxe Team.—A team which consists of three horses, driven two abreast as leaders, and one as wheeler. (See *Unicorn Team.*)

Picker.—A bent piece of iron, which is used for scraping dirt from the soles of the feet.

Piebald.—A horse with *black* and white markings, the colours being evenly distributed in a good marked horse, excepting on the legs, which are almost invariably white. The tail is sometimes black but usually white. (See *Colours, Skewbald.*)

Pig Eye.—A small, sunken eye.

Pillar Reins.—The straps, or chains, terminating in spring hooks, which are fastened to the ends of the sides of the stalls to secure horses which are turned round in the stable with their bridles on.

Pink Eye.—See *Influenza*.

Pipe Horse.—A horse which has undergone the operation of tracheotomy, and wears a tube in his throat.

Pisiform Bone.—A small, in-curved bone which is to be found at the back of the knee. It is slightly grooved so as to form a channel for the back tendons to pass through. (See *Bones, Fore-legs, Knees*.)

Pitch is a most useful substance for applying to diseased or injured feet.

Pithing.—A simple and, if practised by an ordinarily skilful person, a speedy and painless way to kill a horse. It consists of running the blade of a knife between the joints of the vertebrae at the axis, death being practically instantaneous. Were the operation better understood by horse owners, fewer animals would be left to lie in agony after an accident whilst a knacker is being searched for. (See *Axis*.)

Plaiting (A) the feet is a term applied to horses which cross their feet, that is, which put one down in front of the other when moving. (See *Lacing*.)

(B) the mane is a usual custom in connection with hackneys and other light horses which are exhibited in hand.

Pillar Reins.

MR JOHN KERR'S FAMOUS PAIR, LOUDWATER GONGOLT AND GRANGOLT.

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PLEURA—PNEUMONIA

The manes of race-horses are also plaited, and so are those of some harness horses occasionally, but the practice should never be applied to victoria, brougham, and landau horses; in fact, in connection with these a plaited mane may be regarded as a sign of "undress."

Pleura. — The membrane which covers the lungs. (See *Lungs*.)

Pleurisy is usually a result of exposure to cold winds or draughts when the horse is overheated, or it may be a result of influenza or other diseases.

Symptoms.—Shiverings, quick, short breathing, and an increased temperature. The animal is evidently in great pain, as it hurts him to move, and if the ear is placed against his side, the alteration in his breathing will at once be detected, and professional advice should at once be sought for.

Treatment.—The horse should be placed in a comfortable, quiet, and well-ventilated box and heavily clothed, bandages being placed on his legs, whilst hot fomentations should be applied to his chest. If the pain is very great, and the person in attendance understands how to proceed, a little morphia may be injected under the horse's skin, or a few grains of morphia administered internally. (See *Fomentations*.)

Pneumonia, or Inflammation of the Lungs, is a result of a cold, and may affect one or both lungs, in the latter case being referred to as double pneumonia. It is a most

POINTING

dangerous disease, and frequently leaves traces behind it, so no time should be lost in sending for professional advice.

Symptoms.—A short, hacking cough, accompanied by quick breathing, and frequently by a rattling noise if the ear is applied to the region of the lungs. The horse stands with his legs apart, and there is a discharge of a rusty colour from his nostrils.

Treatment.—Place him in a dry box, quite free from draughts, but in which he can get plenty of fresh air; clothe

Pneumonia Poultice.

him well and bandage his legs, foment his chest with hot water, and rub with liniment, or apply a mustard plaster or linseed poultice to the region of the lungs. If his strength fails, give a couple of ounces of brandy every few hours, but do not delay sending for the veterinarian. (See *Bandages, Poultices.*)

Pointing.—A horse is said to point when he stands with the point of his toe resting on the ground and his heel off it or *vice versâ*. This may be the result of his being tired, but

very often it is a sign of a screw loose somewhere. (See *Laminitis, Navicular Disease*.)

Point of Buttock.—The part of the buttock which projects furthest from the body. (See *Buttock*.)

Point of Elbow.—The top back part of the fore-leg which projects at the top of the elbow. (See *Elbow, Fore-legs, Points, Ulna*.)

Point of Hip.—The bony projection on the flanks. (See *Points*.)

Point of Loin.—The highest part of the back, where the croup commences. (See *Jumper's Bump*.)

Point of the Shoulder.—The lowest part of the shoulder in front of the chest. (See *Points*.)

Point to Point Races are cross-country races, which are not run over a regular course, but from one stated point to another. It is usual to mark the course by flags at the jumps. (See *Steeplechase*.)

Points.—See next page.

Poisons are divided into two kinds, irritant or corrosive and narcotic. The former are associated with pain more or less acute, whilst in the latter the horse becomes more and more drowsy and eventually succumbs. Included in the following list are the poisons which most commonly are taken by horses, in some cases by accident, and others through the wilful act of a malicious person, or in the form of a medicine administered with the best intentions by some ignorant individual. In all cases of suspected poisoning, professional assistance should be procured at once, but meanwhile the treatment suggested below may be applied.

POISONS

1 Forehead.	16 Croup.	32 Flank.
2 Eyebrow.	17 Shoulder.	33 Sheath.
3 Eye.	18 Point of shoulder.	34 Stifle.
4 Nose.	19 Upper arm.	35 Chestnut.
5 Nostril.	20 Breast.	36 Back cannon bone.
6 Chin.	21 Elbow.	37 Fetlock.
7 Chin groove.	22 Forearm.	38 Pastern.
8 Jowl.	23 Knee.	39 Coronet.
9 Gullet.	24 Fore cannon bone.	40 Hoof.
10 Forelock.	25 Fetlock.	41 Point of buttock.
11 Poll.	26 Pastern.	42 Buttock.
12 Crest.	27 Coronet.	43 Thigh.
13 Withers.	28 Hoof.	44 Gaskin or second thigh.
14 Back.	29 Chestnut.	45 Point of Hock.
15 Loin.	30 Brisket.	46 Hock.
15a Point of hip.	31 Chest.	

IRRITANT POISONS

ACONITE.—*Symptoms.*—A frothy discharge from the mouth, accompanied by attempts to vomit; pulse weak and irregular, and breathing slow and weak, the animal also sweats profusely in most cases.

POISONS

Treatment.—Rub the horse all over to promote circulation, and give strong doses of brandy and water.

ANTIMONY, or, as it is sometimes called, tartar emetic, is a by no means uncommon cause of trouble to horses and their owners, as if administered to an animal in small quantities it has the effect of improving the brightness of the coat, and hence is often administered surreptitiously and illegally by servants to their charges in the form of condition powders, concerning the composition of which they know nothing.

The Symptoms are shivering, purging, and sweating, associated with pains in the stomach and great weakness.

Treatment.—Tannin being an antidote to antimony, give the horse very strong half-pint doses of tea at frequent intervals pending the arrival of professional advice.

ARSENIC.—A horse often falls a victim to arsenical poisoning through licking iron or woodwork which has been painted green, or picking up some poisoned grain that has been laid for the destruction of vermin. This poison is cumulative in its effects, by which it is meant that a series of small doses spread over an interval of time can in the end be as fatal as a large quantity taken at once.

The Chief Symptoms are violent shiverings, bloodshot eyes, out of which the water pours, a deep red colour of the inside of the nostrils, which generally discharge a fluid, cold limbs, profuse sweating, accompanied by purging, a frothy discharge from the mouth, and intense internal pains.

Treatment.—In cases of suspected arsenical poisoning professional advice should forthwith be sought. Should this not be procurable at once, the strength of the horse may be kept up by drenches of egg and milk, and a dose of peroxide of iron, which may be obtained of the nearest chemist, should be administered. If this is unobtainable, drenches of linseed oil may be alternated with the egg and milk; in acute cases give 1 pint dialysed iron in 1 quart of water.

POISONS

BELLADONNA is often given to a horse by a careless servant as a drench instead of the proper medicine prescribed for it, as it is the active agent in many of the stimulating lotions which are in use in stables; but it requires a pretty strong dose to cause serious trouble.

The Symptoms are dilation of the pupils of the eyes, which cease to be affected by light, a dry, parched mouth, the animal moves unsteadily, and becomes very drowsy.

Treatment.—Very large doses of brandy or whisky and water, or very strong coffee.

CARBOLIC ACID.—*Symptoms.*—Feeble, irregular pulse, the lining of the mouth hard and white, breathing difficult, urine almost black, great prostration, the horse being scarcely able to move.

Treatment.—Give a couple of pounds of Epsom Salts in 2 quarts of water, or 1 pint of sweet oil. If neither of the above are at hand, the whites of several eggs beaten up in water, or salad oil if procurable. Should the weakness increase, give strong doses of brandy or whisky and water.

COPPER.—*Symptoms.*—Acute diarrhœa, the discharge being often stained with blood, quick and difficult breathing, great prostration, followed by convulsions.

Treatment.—The whites of half a dozen eggs beaten up in gruel, followed by 6 ounces of laudanum.

LEAD is not by any means as unusual a cause of horses being poisoned as may be imagined, as it may be taken by them in many ways, but chiefly by having lotions containing lead and intended for external application administered to them by accident, or by eating food which has become tainted by the fumes from chemical works.

The First Symptoms are blueness of the gums, followed by severe pains in the belly, bad smelling breath, diarrhœa, and swelling of the joints, followed by paralysis.

Treatment.—Dose with 1 lb. Epsom Salts or 1½ ounces sulphuric acid in 3 pints of water, to be succeeded by doses of sulphate of magnesia. If much pain exists in the belly,

POITOU ASS

a 1-ounce dose of chlorodyne may alleviate it. If none of the above medicines are at hand, give the whites of a couple of eggs in milk.

OPIUM is often given to a horse in mistake.

Symptoms.—Great drowsiness, weak, slow pulse, slow breathing, and bad smelling breath, followed by increased drowsiness and convulsions.

Treatment.—Endeavour to make the horse move about so as to shake off the drowsiness; frequent large quantities of strong tea or coffee, which may be given as enemas if he cannot swallow them.

STRYCHNINE.—*Symptoms.*—Severe twitching, ending in spasms and convulsions.

Treatment.—Two ounces of chloral hydrate dissolved in water, or very large doses (about 3 pints) of brandy or whisky in water. If chloroform is at hand the horse may be given a little on a cloth to smell.

YEW.—Although horses do not fall as frequent victims to yew poisoning as cattle do, cases sometimes occur with fatal and very sudden results.

Symptoms.—Considerable pain in the belly, which swells a good deal, the horse being very restless and often throwing himself about. There is also weak breathing and coldness of the limbs.

Treatment.—A strong dose of castor oil, or 2 ounces of oil of turpentine in 1 pint of linseed oil.

Poitou Ass.—These asses sometimes attain a height of 15 hands, and some possess as much as 9 inches of bone below the knee. Their ears are enormously large; so large, indeed, that they cannot be carried upright, but are carried poking out at the sides of the head, and the hair on the insides of the ears takes the form of a series of curls, called cadenettes, which are regarded as a sign of pure breeding. The usual colours are dark brown and black, but greys are

found now and then. Bred to cart mares, the jacks of the Poitou breed throw excellent mules of the heavy type, some of them standing well over 16 hands. (See *Ass, Mule, Hinny.*)

Pole.—The movable piece of timber, one end of which passes into a socket in the splinter bar, whilst the other is connected by leather straps or chains to the lower ends of the hames of horses driven as a pair. (See *Hames, Harness.*)

Pole Chains.—The chains connecting the pole with the hames. (See *Hames, Pole.*)

Pole Pieces.—The leather straps which run from the end of the pole to rings in the hames of pair horses' collars, the object for which they are used being to keep the horses to the pole. (See *Pole Chains.*)

Poll.—The part of the horse's head just behind the ears.

Poll Evil is an abscess which forms on the poll, the cause being usually a blow, or from the head collar injuring the head if the horse indulges in the habit of hanging back in his stall with all his weight on the head collar. It is a very painful thing for a horse to suffer from, and if not taken in time may cause a good deal of trouble.

Treatment.—Unless treated in its very earliest stages poultices are not likely to do much good, and therefore blistering should be tried. If this fails, and matter forms, the place should be opened so that the abscess can drain thoroughly. Poll evil, however, is a disease that requires to be operated on with care, as it is far removed, owing to its situation, from an ordinary abscess, and hence if it assumes serious proportions it is rather beyond the power of an amateur to deal with it. (See *Blistering, Prescriptions.*)

Polo Pony.—It is not easy to describe the polo pony, as for playing purposes, though, of course, a good-looking pony

is preferred to a plain one, it is more a case of handsome is as handsome does, many animals of very ordinary appearance having realised extremely high prices in consequence of the reputations they possessed. It may be remarked, too, that until a comparatively recent date miniature thoroughbreds and Arabs have carried all before them in the stallion classes at the leading shows; but of late there are evidences, and very welcome ones, that the day of the polo-bred ponies has arrived, and that the breed will soon be included amongst the ranks of established varieties. If so, there is no doubt that the miniature hunter type will be the favoured one, but, naturally, the light-weight ponies will partake more of the quality of the thoroughbred than the heavy weights. The question of height is one of the chief points of controversy amongst breeders of polo ponies, as though it is generally admitted that the limit should be 14 hands 2 inches, it is obvious that many ponies which are played are over this height; in fact, a desire is expressed that the limit referred to should be exceeded. This extension of height is due to the system of measuring, and not to any carelessness or incapacity on the part of the gentlemen who undertake the responsibilities of placing the ponies under the standard, and no doubt in due course the breeders who entertain different opinions will arrive at an arrangement which will be acceptable to all, and beneficial to the polo pony. Meanwhile, it may be stated that the height should not exceed 14 hands 2 inches, and that the hunter type, either heavy or light weight, is what is sought for by breeders. (See *Hunter*.)

Pommel.—The pommel, or head of the saddle, is the highest point in front, and should be about 4 or 5 inches behind the top of the withers. (See *Saddle*.)

Ponies.—See *Dartmoor, Exmoor, Fell, Garron, Hackney, Iceland, New Forest, Rum, Shetland, Welsh, West Highland*.

Port.—The indentation, of a greater or less depth, in the

centre of the mouthpiece of a bit, which presses on the roof of the mouth and checks a puller. (See *Bits*.)

Potatoes are not an ideal food for horses, as though they are moderately nutritious, they do not assist much in making flesh. Still, heavy horses which do slow work do fairly well on potatoes when boiled, if they are mixed with chaff and a little corn. (See *Feeding*.)

Poultices are just as useful in cases of horses' ailments as they are when mankind are concerned, for they not only allay pain, but assist in bringing abscesses to a head, and are most beneficial in troubles of the respiratory organs and colic. Bran is the usual material of which they are made,

Poulticing Withers.

Poulticing Forehead.

but if not mixed with linseed oil or meal it soon becomes dry, and therefore linseed meal is to be preferred, though it costs more money. Mustard added to the meal is useful in some cases, and some people favour boiled turnips or carrots, which draw well. Whatever the ingredients may be, it is

PREJEVALSKY'S HORSE

necessary that they should be mixed well, applied hot (as a rule), and kept moist. The various illustrations which appear will show how poultices should be secured when placed on different parts of the body. The poultice boot, which is made

Poultice Boot.

Poulticing Breast.

of canvas nailed on to a piece of board and laced up the cannon bone, is of great assistance when the hoofs have to be poulticed, as unless there is a piece of wood under the foot the poultice is liable to work up the leg, and the affected place derives no benefit. In using this boot the poultice should first be placed inside, and then the horse's foot, the boot being then laced up so that it will remain in its position. By using this boot a poultice can be kept moist for hours. (See *Bran*, *Linseed*, *Mustard*.)

Prejevalsky's Horse.—This breed was discovered some thirty years ago by the Russian traveller, Prejevalsky, in the Great Gobi Desert of Mongolia. They are considered by many scientists to be a naturally wild species, nearly allied to

PREJEVALSKYS HORSE

the original type which roamed Europe some three hundred thousand years ago, in the Neolithic period of the world's history. In some prehistoric caves found in France sketchy drawings of horses have been discovered which are remarkably like this species in type. They now inhabit a dry and sultry district at the south of the Altai Mountains, where they roam in herds of from fifteen to twenty mares in Indian file, each herd led by a stallion. They are small, being from 12-13

Prejevalsky's Horse.

hands in height, and of dun colour on the back, which gradually fades to cream at the sides in the winter coat; in summer the colour is darker, and a dark stripe down the back is visible. They have the chestnuts, which are the peculiar features of the horse, and they also neigh instead of braying as the ass does. The mane is short and erect, having no forelock, while the hair on the tail begins half-way down. The head is large and heavy, the comparative length being greater in proportion to the body than in the cart horse; the brain is larger and the forehead wider than in domesticated breeds, and the body stands higher at the croup than at the withers. (See *Castors, Evolution of the Horse.*)

PREMIUMS—PRESCRIPTIONS

Premiums.—King's Premiums are the money prizes awarded under the direction of the Royal Commissioners to a limited number of thoroughbred stallions, whose owners agree that they shall travel certain districts of the country during each forthcoming season at a fee of 40s. It is further agreed that a horse shall serve not fewer than fifty half-bred mares at this fee, and shall not compete for prizes at any other show during the season. The limit of age is from four years to twenty years, and the number of premiums awarded is twenty-eight, of the value of £150 each. The original source from which the money came to provide for these premiums was the Queen's Plates, which were established for the purpose of encouraging thoroughbreds which could stay over a long distance. In the year 1883, however, it was decided to apply the sum in question to the purposes of Queen's Premiums, as described above, the title, of course, being changed to King's Premiums when King Edward ascended the throne. (See *Hunter, Hunter Sires.*)

Prescriptions.—The following is a list of simple prescriptions which most horse owners will be able either to make up themselves or else procure at any chemist's shop. It is perhaps necessary to state that the weights of medicines as given below are apothecaries not avoirdupois weights.

Antiseptic Dressing.

Carbolic acid	.	.	.	1 part.
Sweet oil or vaseline	.	.	.	20 „

Antiseptic Lotion.

Boric acid	.	.	.	1 part.
Hot water	.	.	.	20 „

Or,

Carbolic acid	.	.	.	1 part.
Water	.	.	.	20 „

PRESCRIPTIONS

Appetising Drench.

Tincture of cardamoms	.	.	1½ ounces.
Sulphuric ether	.	.	1 „
Tincture of ginger	.	.	½ „
Gruel	.	.	1 pint.

Blisters.

Note.—All blisters should be rubbed well in.

Biniodide of mercury	.	.	1 part.
Lard	.	.	7 „

This ointment is a useful mild blister for spavins, splints, etc., and should be applied twice daily.

Or,

Powdered cantharides	.	.	1 ounce.
Camphor	.	.	1 „
Beeswax	.	.	1 „
Lard	.	.	6 „

Melt the lard and beeswax, then add the camphor crushed up fine, and lastly the cantharides.

Or,

Powdered cantharides	.	.	1 ounce.
Resin	.	.	1 „
Lard	.	.	4 „

Melt the lard, add the resin first, then the cantharides, and mix thoroughly. (See *Blistering*.)

Colic Drench.

Nitric ether	.	.	2 ounces.
Laudanum	.	.	1 „
Warm gruel	.	.	1 pint.

Or,

Tincture of turpentine	.	.	2 ounces.
Linseed oil	.	.	1½ pints.

PRESCRIPTIONS

Or,

Tincture of ginger	1 ounce.
Tincture of turpentine	1 „
Glycerine	$\frac{1}{2}$ „
Oil of peppermint	12 drops.
Gruel	1 pint.

Cooling Lotion.

Goulard's Extract	4 ounces.
Dilute acetic acid	2 „
Water	1 quart.

Or,

Dilute acetic acid	3 ounces.
Methylated spirits of wine	2 „
Sal ammoniac	$\frac{1}{2}$ „
Water	1 pint.

Or,

Tincture of arnica	3 ounces.
Solution of subacetate of lead . . .	1 „
Water	6 „

Counter-irritants or Liniments.

Mustard	4 ounces.
Turpentine	1 „

Mix the mustard up with water into a thin paste, and then add the turpentine.

Or,

Soft Soap	4 ounces.
Camphor	1 „
Solution of ammonia	$\frac{1}{2}$ pint.
Proof spirit	2 „

Or,

Liquid ammonia	} Equal parts.
Rape oil	
Spirits of turpentine	

This is a capital ointment for sprains.

PRESCRIPTIONS

Or,

Turpentine	4 ounces.
Olive oil	4 „
Spirit of hartshorn	3 „
Camphor	1 „

Or,

Linseed oil	8 ounces.
Liquid ammonia	1 „
Turpentine	1 „

Or,

Ordinary soap liniment	16 ounces.
Laudanum	2 „
Ammonia	1 „
Tincture of cantharides	1 „

(See *Liniments.*)

Diarrhœa Drench.

Chlorodyne	1½ ounces.
Warm water	1 pint.

Or,

Prepared chalk	2 ounces.
Powdered gum acacia	1½ „
Laudanum	1 „
Extract of catechu	1 „
Aromatic spirit of ammonia	½ „
Water	1 pint.

Or,

Tincture of opium	1 ounce.
Alum	2 drams
Powdered ginger	2 „
Warm water	1 pint.

Eye Lotion.

Laudanum	1 ounce.
Water	1 pint.

PRESCRIPTIONS

Fever Ball.

Nitre	3 drams.
Tartar emetic	1½ „
Digitalis	1 „

Give one ball daily.

Fever Drench.

Nitre	3 drams.
Sweet spirit of nitre	1 ounce.
Camphor	2 drams.
Water	1½ pints.

Give as a drench three times a day.

Or,

Solution of acetate of ammonia	4 ounces.
Spirit of nitrous ether	1½ „
Fleming's tincture of aconite	5 minims.
Water to make 8 ounces.	

Give as a drench every four hours.

Or,

Nitre	3 drams.
Camphor	2 „
Tincture of opium	½ ounce.
Water	1 pint.

Healing Lotion.

Sulphate of zinc	1 ounce.
Acetate of lead	1 „
Water	1 quart.

Purging Ball.

Barbadoes aloes	5 drams.
Powdered ginger	2 „
Glycerine	1 teaspoonful.
Sufficient linseed meal to make it firm.	
Mix thoroughly.	

PRESCRIPTIONS

Or,

Barbadoes aloes	.	.	.	5 drams.
Castile soap	.	.	.	3 "
Oil of caraways	.	.	.	10 drops.
Mix thoroughly.				

Or,

Barbadoes aloes	.	.	.	6 drams.
Tartar emetic	.	.	.	2 "
Ginger	.	.	.	2 "
Treacle sufficient to bind.				

This is a powerful purge.

Purging Drench.

Barbadoes aloes	.	.	.	5 drams.
Powdered ginger	.	.	.	2 "
Warm water	.	.	.	1 pint.

Or,

Linseed oil	.	.	.	1 pint.
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This is a mild purge.

Roaring, Whistling, or Touched Wind Ball.

Powdered squills	.	.	.	2 drams.
Gum arabic	.	.	.	1 "
Extract belladonna	.	.	.	$\frac{1}{2}$ "
Powdered camphor	.	.	.	$\frac{1}{2}$ "
Linseed meal	.	.	.	} Sufficient
Treacle	.	.	.	
				to bind.

Make one ball, to be given twice a day ; if not given at once, or kept carefully rolled up in tissue paper and an air-tight box, the camphor will evaporate.

Tonics.

Powdered caraways	.	.	.	6 ounces.
" liquorice root	.	.	.	4 "

PRICKS—PROMINENT FOREHEAD

Powdered ginger	.	.	.	2 ounces
„ sulphate of copper	.	.	.	2 „
„ gentian	.	.	.	2 „

Mix, and make sixteen powders. Give one a day with the food slightly damped.

Or,

Green crystallised sulphate of iron, 20 to 60 grains, according to size and age of horse, once or twice a day in the food.

The crystallised iron should be kept in a stoppered bottle ; it is not a good tonic when the liver or digestive organs are affected. In such cases $\frac{1}{2}$ ounce of dialysed iron in water is a preferable tonic. (See *Medicines, Restoratives.*)

Pricks often occur when a horse is carelessly shod, through a nail being driven into, or close to, the sensitive part of the foot. The result is inflammation, often accompanied by suppuration and, of course, tenderness.

Treatment.—Take off the shoe and pare away the sole so as to relieve the pressure. If there is reason for believing that matter has formed, a small opening may be made to enable it to escape, as otherwise it may spread upwards to the coronet and cause a great deal of trouble, and then poultice. When the shoe is replaced, no nail should be driven near the seat of the prick. Should it be seen that the nail has entered a sensitive part before the above symptoms appear, the nail should be at once drawn and the hole stopped with tow—either dipped in tar or plain—in order to prevent dirt from getting in. (See *Shoeing.*)

Prominent Forehead.—Some horses are considerably disfigured by a prominent forehead, which conveys a heavy, even sulky, expression to the head. This, however, is more

imaginary than real, as the formation appears in some very good horses, but it is not admired or liked.

Propelling Power is produced by the action of the hind limbs and by the weight of the horse, as it is obvious that a bulky, heavy body when propelled forwards produces more force than a light one. The amount of propulsion must also clearly depend upon the power a horse possesses to bring the joints and muscles of his hind limbs and back into force, and hence a faultily made animal with weak or sickle hocks and deficient in muscle behind and about the loins and backs must be at a disadvantage with a properly formed one when heavy weights have to be moved. The speed and fore-action of a light horse are also influenced to a considerable extent by the propelling power of the horse, as when he fails to flex his hocks as he should they drag behind him, as it were, and there is not the propelling power that there should be to force the body forward. Consequently, the horse does not cover as much ground as he should in his stride. (See *Action*, *Free Action*, *Round Action*.)

Pulling.—A horse which pulls is never a pleasant one to ride or drive, but it is usually possible to arrive at some method of modifying the annoyance. As often as not the propensity may be reduced by discovering the sort of bit which suits him best, as mouths differ very considerably, and it is not always the severest bit that controls the puller best. If the mouth is callous and no bit will restrain the horse he may be worked in a net or nose-band, which will press on his nostrils when the reins are pulled. Some pullers are quite hopeless cases, and these are generally the results of bad breaking and improper biting when young.

The accompanying illustrations represent a very practical arrangement, designed by Mr Walter Winans, for the control of hard-pulling horses. The accompanying illustration shows wristlets, both open and fixed on the wrist, and also the loop on the rein, the wristlet having a raised ridge about $\frac{1}{8}$ inch

PULSE

high. Figure No. 2 shows the wristlet buckled on with the hand passed through the loop on the rein, which is drawn tight. By this arrangement the driver pulls by the wrist,

and so there is no strain on the fingers, which are left free for using the whip or guiding the horse. (See *Bits, Bolting, Net, Nose-band.*)

Pulse.—The number of beats of the pulse varies in different breeds from forty-five a minute, in the case of a

pony, to thirty-five, in a heavy horse, when in health. In cases of sickness and fever these figures are increased. The

Taking the Pulse.

best way to take the pulse of a horse is to place the fingers inside the jowl, as in the accompanying illustration.

Punctured Wounds.—See *Bleeding, Cuts.*

Pupil.—The dark, circular spot in the centre of the eye, which increases in size in a dim light and becomes smaller in a strong one. (See *Eyes, Iris.*)

Purges.—Opening medicines of various degrees of strength. (See *Administering Physic, Medicines, Prescriptions.*)

Purging may be the result of aperient medicine having been administered, of poison, or of a sudden change of food which produces diarrhœa. It is necessary, therefore, to endeavour to ascertain the cause of purging, and if poison is suspected the veterinarian should be sent for. (See *Diarrhœa, Poisons, Prescriptions.*)

Q

Quagga.—This extinct member of the equine family may be referred to briefly, as it is possible that some hybrids from it may still be in existence. Like the zebra, South Africa was the land of its origin, and it partook more of the nature and disposition of the horse than the zebra, being quite easy to break and possessing a very good mouth. The distinguishing stripes which formed so conspicuous a portion of its markings were distinct on the head and neck, but gradually faded away behind the withers, disappearing altogether about the middle of the back. (See *Hybrids*.)

Quality.—A horse is said to possess quality when he shows signs of breeding. The expression, however, is apt to be misapplied, as many people appear to confuse the quality that is characteristic of the thoroughbred with that belonging to other breeds. Thus a hackney, which possesses the quality of the blood-horse, would be altogether too light and breedy-looking for his proper work, but there is no reason why a hackney should not possess the refinement which is characteristic of a well-bred member of his own breed, though this refinement may be less delicate than that of the thoroughbred.

Quantity of Food.—The allowance of food a horse requires depends not merely upon the size of the animal and how much work he is doing, but also upon the quality of the food itself, as the best will always be the most nutritious, and consequently goes further than that of indifferent merit. (See *Food*.)

Quarrelling.—Some horses are of most quarrelsome dispositions, and will not get on with any other animals, whilst others only display their dislike to a certain stable companion. In the latter instance it is usually an easy matter to get over the difficulty and avoid trouble by changing the stall of one of the parties to the quarrel, but in the case of a horse which is perpetually annoying his

QUARTER OF THE HOOF—QUITTOR

neighbours there is nothing to do but to place him by himself, or else in an end stall in which his head collar rope can be fastened to a ring in the wall, so that his head is kept away from the horse next to him, and nothing passes behind him to kick at. A quarrelsome horse should never be turned out with others, for if he is, some mischief is sure to happen.

Quarter of the Hoof.—The part of the wall between the toe and the heel. (See *Foot*.)

Quarters.—The parts of a horse which include the croup and thighs.

Quarter Sheet is that part of a horse's clothing which covers the entire body and buckles in front. (See *Clothing*.)

Quidding.—When a horse, through bad teeth or any other cause, is unable to masticate his food properly, and can only chew it, he often returns it. This is called quidding, but it must not be confused with vomiting, as a horse very rarely, if ever, vomits. (See *Dentistry*, *Indigestion*.)

Quittor is an abscess which forms at the coronet, causing considerable pain and, of course, lameness. It is generally the result of an injury either through a tread or bruise; but in some cases a sore and discharge of pus is caused by a prick in shoeing or a nail running into the sole of the foot, and this may be mistaken for quittor. The reason for the sore appearing at the coronet is, that the inflammation caused by the prick causes suppuration, and the pus cannot escape unless the horn of the foot is opened, and hence finds its way upwards and discharges at the coronet, thus it may be mistaken for quittor by an inexperienced person.

Quittor.

Treatment.—Remove the shoe, and endeavour to ascertain the seat of the abscess. When the latter is found, pare away the sole to relieve the pressure, and make an opening to allow the pus to escape. Place the foot in a pail of hot water for an hour or more, and poultice, afterwards dressing the wound with carbolic acid, but, as quittor is a serious matter, the assistance of a professional man should always be procured if available. (See *Poultices, Treads.*)

R

Rack.—(A) The hay rack is best situated with its top on a level with that of the manger, as this arrangement prevents dust from falling on to the horses, and foreign substances from entering their eyes or noses.

(B) The racking gait is similar to the *Pace*, which see.

Rack Chain.—The short chain fixed below the hay rack, or, if the latter is on a level with the manger, on the wall in front of the horse, which is used for keeping his head up during the day. This prevents him from eating his litter, or backing out of his stall.

Radius.—The principal bone of the fore-arm which connects the elbow with the knee. (See *Fore-legs.*)

Railway Travelling.—Many horses object to enter a railway box, and some are very bad travellers, being nervous and fretful during the whole of the journey, whilst others cause no trouble at all. Such difficulties, however, can generally be overcome by patience and firmness, but the real dangers commence when the horse is in the box, as if a proper amount of care is not bestowed upon him, he may contract some sickness or meet with injury on the road. To begin with, the person in attendance—and no horse should be sent on a journey without somebody in charge of him—ought to satisfy himself that the box has been thoroughly

RALLI CAR

disinfected lest its previous occupant may have left the seeds of glanders or some other disease behind him. Care should also be taken to see that the animal is properly secured, as sometimes the railway servants who are responsible for this duty, though on the whole a most reliable body of men, fail to do all that is required. The subject of ventilation has also to be considered, for whilst the horse must not be half stifled by the absence of air, draughts should be excluded as far as possible; hence some discretion should be exercised when deciding which ventilators are to be kept open and which shut, everything depending upon the temperature and direction of the wind. It is a good plan for the man to take a collapsible canvas pail with him if the journey is a long one, as he can then water his charge on the way without incurring the risk which attends his drinking out of an infected pail, whilst it often happens at a railway station that though water may be plentiful a bucket may be unprocurable. Excepting in the very warmest weather a horse should wear his day clothing whilst on a journey, hood and all, and even in summer a linen sheet should be worn. Knee-caps should always be worn and a tail guard also, as preventions against accidents or minor blemishes. (See *Clothing*.)

Ralli Car is a low-hung, deep-sided car with panel full

Ralli Car.

round the top, very suitable for ladies' use. It is easy of

access, and having deep sides is warm and comfortable in bad weather. It is sometimes hung upon elliptics, but more generally upon three springs with fulcrum shafts to relieve the riders from the horse motion. C. spring carriages are always considered more high class than the less pretentious variety hung upon elliptic springs.

Random Team.—Three horses driven tandem are alluded to as a random team.

Rangy.—A horse with plenty of size and scope about him is referred to as rangy.

Rat Tail.—A tail with little or no hair upon it.

Reaches.—See *Overreaches*.

Rearing.—This most objectionable vice is usually met with in saddle horses, as harness animals are to a certain extent restrained by the shafts, though when the latter do rear a nasty accident can easily occur. Very probably some animals are predisposed to rear, and if so there is not much chance of curing them of the habit, and they are best got rid of. Others—and the majority beyond a doubt—either rear, or have acquired the vice, from improper biting and possibly the heavy hands of their rider. A tender mouth cannot endure a severe bit, and hence if the latter is in use in the case of a rearer a snaffle and martingale may be tried. This often accomplishes excellent results; but if it fails and the horse is a persistent offender, he had best be given up as hopeless. (See *Bits, Biting, Mouth*.)

Rein.—A horse is said to possess a good rein when there is plenty of him in front of the saddle, his neck being long, his shoulders well placed, and his head neat.

Reins.—See *Driving, Riding*.

Remounts.—See *Cavalry Horse*.

Removing Shoes.—The shoes of all horses should be removed about every three weeks, in the cases of young ones about once a fortnight, otherwise they will suffer inconvenience through their shoes pinching them. This is because the horn of the hoof grows, and the iron of the shoe, of course, being non-elastic, pain and very often inflammation, terminating in lameness, is the result. (See *Buffer, Shoeing*.)

Repositories.—Almost every important town possesses one or two repositories at which horses are sold, the conditions of sale being very much the same, and in most instances perfectly fair to all parties concerned. The inexperienced purchaser, however, does not often stand much of a chance in picking up a bargain, as dealers and their agents are always on the look-out for such, and will often run up a horse in order to prevent a likely customer from securing what he wants without coming to them. At the same time, it must be pointed out that the methods of the heads of the leading firms are invariably honourable and impartial, and therefore if the novice takes a fancy to a horse, and adopts the precaution of having him vetted, he may be quite sure that no undue favour will be shown to any one who is bidding against him. (See *Auction Sales, Buying*.)

Respiratory Organs.—The principal of these are the nasal passages connecting the nostrils with the larynx, the larynx, the trachea, the bronchial tubes, and the lungs.

Rest.—All horses require a periodical rest, one day a week being sufficient for animals in ordinary work, but, of course, hunters after a long day are entitled to more. At the same time, it is not desirable that an animal which is not working for two or three days should be left all the time in the stable; one day of absolute rest is usually amply sufficient, as if he does not get a little healthy exercise there is a good chance of his legs filling. The night before the day

of rest a bran mash may be substituted for the last feed of corn with beneficial results, and he will not require full feeding when not at work. As a matter of course, a horse will rest better in a quiet, loose box than he will in the stall of a stable where other animals are constantly passing to and fro; but few will take at once to new quarters, and therefore it is best not to remove him from the place he is accustomed to. Some horses never lie down, but sleep and rest themselves standing up, and leaning against the sides of their stalls. This habit may be overcome by keeping the horse in a loose box, but it is difficult to cure, though any device is worth trying, as the legs get worn through the animal's weight always being on them. (See *Bran, Monday Morning Evil*.)

Restiveness may be the result of high spirit, temporary excitement, or vice, and in each instance the only thing to be done is to treat the offender kindly, but with firmness. In cases where a horse is fidgety and gives trouble when being physicked or groomed, the best course to adopt is to have one of the fore-legs either held or tied up, as he then will stand perfectly quiet.

Restoratives.—A horse that is thoroughly exhausted by sickness or the effects of overwork may often be revived by the judicious use of stimulants such as the following:—

Eggs and Brandy.—Four eggs may be beaten up in a couple of wine-glassfuls of brandy and given him every four hours. If he can swallow, 1 pint or more of good milk may be added, and given in the form of a drench.

Bread and Beer is a capital pick-me-up for a tired horse if he can be persuaded to take it, and most horses which have got accustomed to beer are very fond of it. The best way to proceed if there are doubts as to whether he will take it is to put 1 quart of good sound beer at the bottom of a pail, and the soft part of a loaf in it, leaving a part of the loaf, which is broken up, outside the beer. Then if the horse

will feed he will commence on the dry bread and gradually get on to that which is soaked. Some horses infinitely prefer stout to beer.

Bread and Milk will be readily eaten by most horses if a little salt is added to it.

Beef Tea.—In extreme cases of exhaustion a drench of strong beef tea, containing no fat, as grease of any kind is disliked by a horse, may be given in half-pint drenches every few hours.

Linseed Tea.—Boil 1 lb. of linseed thoroughly in a couple of gallons of water, and strain it carefully. This is a very good drink in cases of fever, and a little lemon juice, if added, is often liked by the horse.

Rice-water. — Wash $\frac{1}{2}$ lb. of rice, soak it for two or three hours in 6 quarts of warm water, then boil slowly for an hour, and strain. Give when cold. This is a good drink in cases of diarrhœa.

Rheumatism. — No doubt more horses suffer from rheumatism than many people imagine, and beyond all question many cases of lameness are attributable to this source, either chronic or acute, and the former very often follows the latter, which is usually caused by cold and damp.

The Symptoms of acute rheumatism are a high temperature, stiffness of the joints and muscles, and evident pain, all of which are disposed to increase, whilst often the joints swell and become heated. In cases of chronic rheumatism, where the joints are usually attacked, there is less heat, but the pain is considerable, and the animal becomes lame.

Treatment. — If the pain is very severe, one dose of tincture of opium, 2 ounces, in 1 pint of water may be given, and a few hours afterwards salicylate of soda may be given every two or three hours until the temperature falls, when it should be discontinued. The horse should be kept warmly clothed and bandaged, and the parts affected well rubbed with some stimulating liniment. (See *Intermittent Lameness, Prescriptions*.)

Ribbed Up.—A horse is said to be well ribbed up when his back ribs are long so that the belly is not tucked up and does not give the appearance of a wasp waist. (See *Points*.)

Ribs.—A horse has eighteen ribs on each side, eight called true ribs, which are fixed to both the breast bone and vertebræ, and ten back or false ribs, which adhere to the vertebræ only. The middle ones are the longest, and they gradually shorten towards the ends of each row, the true ribs being broader than the false ones.

Rice Water.—See *Restoratives*.

Riding.—Many pages could easily be devoted to the subject of riding, but the objects of this work will be secured if a few elementary hints are given here, as when the preliminaries are mastered, experience and advice from practical equestrians will do the rest that is required.

The first thing to be done is to see that the horse is properly bitted and that the saddle fits him comfortably. This must naturally be the duty of the adviser of the novice, as the latter cannot be expected to understand the matter, but it is remarkable how many men are careless on the subject. The question of biting is dealt with in other parts of this book, but regarding the fit of the saddle it may be pointed out that it should be padded so as to fit the horse and not press upon the withers, else galls and sore backs are certain to result. The girths should be just tight enough to permit the fingers to be inserted beneath them and the belly of the horse, and it is a wise precaution to take before mounting a strange horse to satisfy oneself that they are tight enough, as some animals possess a trick of blowing themselves out when the girths are being buckled, so that the latter become loose and the saddle is apt to slip. Having seen to the above details and satisfied himself that his stirrup leathers are at all events about the right length, which is, roughly speaking, the length of his arm, the reins

should be taken in the left hand, the rider taking his position on the near side of the horse alongside the withers, and with his face towards the tail, the stirrup leather having been previously twisted so that the flat of the iron is towards him. Then he should place his foot in the stirrup by the help of his right hand and take hold of the mane near the withers with his left one, after which he should turn round so as to face the saddle and take hold of the cantle of the latter with his right hand. This assists him in raising himself from the ground, but in passing his right leg over the horse's back, the rider should be careful not to touch the animal with his foot, especially if he wears spurs, which no novice should

ever do. If the bridle is a single one the reins should be held so that they are divided by the second and third fingers of the left hand; if a double one, the third finger should divide the curb reins, and the second, third, and fourth, the snaffle reins. The latter should be pulled tight by the right hand, but the curb should be left slack. The balls of the feet should rest upon the stirrup, the practice indulged in by some people of riding with their feet well home so that their ankles come in contact with the top of the stirrup being unsightly, and dangerous in case of a fall, and the feet should be carried with the toes only very slightly pointed outwards. The elbows should be kept close to the sides, the left hand which holds the reins being turned inwards and with the knuckles slightly upwards, almost touching the pommel of

the saddle. The body should be kept perfectly upright, the thighs grasping the sides of, and the knees firmly pressed against, the saddle. As a skilful rider controls the movements of his horse to a very considerable extent by the pressure of his legs against the sides of the animal it is necessary that the novice should secure his proper balance as soon as possible, else he will lose a good deal of power over his mount.

A great deal depends upon the action of the horse when the rider commences to proceed at a faster pace than the trot. A short, scrappy mover will jolt a beginner terribly and cause him much difficulty when he attempts to rise in his stirrups as his horse brings his off fore-leg on the ground. The canter is a far easier gait for the rider, but experience and practice will enable any person of fair nerve to overcome his difficulties. It is far easier to keep one's seat gracefully when a horse is being sent from a walk to a trot or canter than when the process is reversed, especially if he pulls up suddenly, as he is pretty certain to do if his reins are tightened too quickly or sharply. In changing from the walk to the trot the reins should be slightly tightened and the horse encouraged to proceed by increased pressure of the knees; whilst if he is required to canter his off rein should be tightened and the left knee of the rider pressed into his side so that he will lead off with the off fore-leg, as is usually desired; whilst the act may be reversed if it is wished that he should lead off with the near fore-leg. In dismounting, after the right foot is taken out of the stirrup the mane should be grasped with the left hand, and then the process of mounting should be reversed. (See *Bitting, Canter, Mouth, Saddle, Trot.*)

Riding Horse.—A riding horse for country work need not possess all the quality of a park hack, but he must possess long, sloping shoulders else his action will be rough, and if his neck is short and head is heavy he will not be so pleasant to ride or easy to keep from stumbling as if the

RIDING SCHOOL

reverse were the case. His action, too, should be easy but not too high, and his back and quarters level, whilst the matter of substance must depend upon the weight he is required to carry. (See *Lady's Horse, Park Hack.*)

Riding School.—The importance of having a properly constructed and sufficiently roomy riding school at the disposal of a horse breaker or stud groom can scarcely be

Riding School at the Woodhatch Stud.

overestimated. Unfortunately, however, such buildings, when they exist, are often by far too small, which is unfortunate when show horses are being schooled, as if the sides of the riding school are much shorter than those of the ring in which the horses are judged, the animals are apt to lose their balance at the turns in public, having been accustomed

to go a lesser distance at home. If possible, therefore, it is a good plan to hurdle off a space of ground out-of-doors of exactly the dimensions of the judging ring at the show for which the horses are being prepared, and to lay tan around the sides, so as to familiarise them with the extent and size of the ring. The best material to spread on the floor of a riding school is tan, which requires to be kept just damp in order to prevent its becoming dusty, and there should be a gallery for spectators, whose presence is often desirable during the concluding stages of a horse's schooling for a show, as they assist in accustoming him to the sight of unfamiliar objects. The Riding School of the Woodhatch Stud, one of the most perfect in existence, measures 200 feet by 50; there are twenty loose boxes attached to it, and a spacious feeding house, supplied with all the most modern appliances for preparing and storing food, the whole being illuminated by electric light.

Rig.—(A) An American term applied to the appointments of a vehicle, including the rugs for the occupants' use.

(B) An entire horse, one of whose stones has not come down into the scrotum.

Ring-bone.—Undoubtedly hereditary, is the result of inflammation of the pastern bones, and is usually the result of concussion acting upon weak or ill-made pasterns. It can be detected in its earlier stages by lameness, accompanied by heat at the coronet or above it, in which case it is called high ring-bone. The feet are usually comparatively cool, but subsequently swellings appear on the sides of the pastern bone, and if these spread round to the back, the case is practically incurable.

Treatment.—Remove the shoes, blister, and give the horse a long rest on cooling food. (See *Blistering, Side Bones.*)

RINGS ON THE FEET—RINGWORM

Ring-bone (high), from outside.

Ring-bone (high).

Rings on the Feet, which may be described as ridges running round the outside walls of the hoof, are always to be regarded with suspicion, as they may be the result of laminitis. They are also sometimes caused by a horse having been turned out on damp land. If the coronet has been blistered, rings occasionally appear on the hoof for a few months, and then die away. (See *Laminitis*.)

Ringworm.—This most objectionable disease is highly contagious, and consequently an affected animal should be isolated. It is often a result of a horse on a journey being baited in a dirty stable, and hence due precautions should be taken to see that strange premises are clean.

Symptoms.—Small rings or patches appear, on which the hair stands up and eventually falls off, leaving bare places.

Treatment.—Apply an ointment of iodine one part, lard eight parts, without delay.

Roach Back.—A back which is higher in the middle than it is at the withers and loins.

Road Coach.—See *Coach*.

Roadster.—A horse adapted for fast work on the road. Of late years it is chiefly applied to light harness horses. (See *Harness Horse*.)

Road Team.—A team of horses which is used for working a road coach is not expected to possess the quality of a park team. The former are required for business purposes, not for show, and hence blemishes which would be unpardonable in a park team are excusable in the case of horses which are meant for work, but they must be able to do all that is required of them. The wheelers in particular must possess weight, power, substance, and the necessary speed; the leaders usually displaying a good deal more quality. Sixteen hands is the correct height, and of course there should be plenty of bone and the feet must be sound, else the horses could never get through their work. (See *Park Team*.)

Road Waggon. — A light, four-wheeled, box-shaped vehicle, constructed to carry two persons. The wheels have wire spokes, and are of the same size, consequently the road waggon cannot full lock. (See *Carriages*.)

Roan.—A roan horse is one whose coat is more or less flecked with white hairs. In some cases these extend all over his body, in others they are not so widely distributed, and may only appear on the flanks; still, they, strictly speaking, constitute the horse a roan. Blue and a pinkish chestnut ground colours are the most frequently met with, the horses of the latter shade of jacket being termed red or strawberry roans, but chestnut, bay, and brown roans are also known. (See *Colours*.)

Roaring is the result of some affection of the larynx

which affects the respiration and causes the horse to give forth an unnatural grunting sound when he moves fast or suddenly. In some instances the trouble is only temporary, as when a horse is suffering from the effects of laryngitis, and then it usually passes away when his health is restored. On the other hand, in chronic cases there is no hope of cure, and the roarer may therefore be regarded as unsound, and beyond the reach of veterinary skill. Of course there are methods which may be applied to relieve him, and which may often cause him to breathe almost normally, but their effects are only temporary. Many dealers, however, are fully prepared to derive what benefit they can from the knowledge they possess of such palliatives, and hence it is their practice to administer drenches of linseed oil, opium, or aconite upon an empty stomach, and thereby assist their roarer to breathe with greater freedom when brought out. No doubt a tendency to roar is increased, even if it is not naturally developed, by tight bearing-reins, but the trouble is unquestionably hereditary, though it is an uncommon occurrence to find a pony roarer.

Symptoms.—The sound of roaring is a long-continued one, but is only heard when the breath is drawn in. Some horses which are undoubtedly roarers make very little noise, and it is therefore difficult for an unskilled person to detect their infirmity. If well lunged, or sent a good spin round a field, or in the case of heavy horses if they are given a considerable weight to draw, the sound will always be heard. Most, if not all, roarers will give a grunt if suddenly startled, and hence the method of going up to a horse quickly and threatening to hit him is often tried as a test of roaring. It is not every horse which gives a grunt under such conditions that is a roarer, which fact may be remembered. Once more it may be stated that there is no cure for roaring, and therefore it is useless to indulge in experiments in that direction. (See *Grunting, Whistling.*)

Rock Salt.—All horses are fond of salt, and it is very

good for them. Hence the desirability of there always being a piece of rock salt in their mangers for them to lick.

Roller.—The wide piece of webbing which is buckled round a horse to keep his rugs on. (See *Clothing*.)

Roller Cloth.—The thick piece of cloth which is sometimes placed on a horse's back under the roller for the sake of appearances.

Roman Nose is the term applied to the formation of face which rises above the nose, giving the lower part of the head a common expression.

Roofs.—The best roofings for stabling are slates, tiles, and thatch, all of which possess the advantage of providing a good resistance from the weather and of more or less durability. Of the three perhaps thatch is the pleasantest for the horses to live under, provided that it does not harbour ticks and other pests, as it is cool in summer and warm in winter; but it does not last so long as the others, and excepting in country places would be prohibited by the local authorities, as it increases the risks of premises taking fire. For the same reason weather-boarding, or match-boarding covered by felt cannot be thought of for town use, but under any circumstances neither of these equal the above for stable purposes, though they do well enough for sheds and out-houses which may be used as temporary accommodation, or for common horses. Corrugated iron, excepting that it is rain-proof, is a thoroughly bad material for roofing, as it is hot in summer and very cold in winter. It is costly, moreover, as it has to be laid on match-boarding, otherwise there is a constant dripping from it owing to the condensation of the air.

Roughing.—See *Frost Nails*.

Round Action.—A horse is said to possess round action

when he shows no liberty or dash as he moves. Many high-movers have this fault, as they lift their knees almost

up to their bits and put their feet down in nearly the same place from which they picked them up. Such horses invariably lack back action and propelling power. (See *Free Action, Propelling Power.*)

Royal Commission on Horse-breeding.—See *Premiums.*

Royal Mares.—The description applied to the mares, believed to be of Eastern blood, which King Charles II. imported into this country with the object of improving the native breed.

Rugs.—See *Clothing.*

Rule of the Road.—The rule of the road in England is keep to the near side, excepting when passing the vehicle in front of you, which you must do on the off side. In

most other countries, if not in all, the rule is exactly the reverse. An exception is made here, too, in the case of horses which are being led in country districts, as it is the more usual practice to take them on the off side, so that the person leading them is next the footpath, which makes it less easy for the horse, if viciously inclined, to injure pedestrians. In towns, however, the traffic would become disorganised were this method to be adopted. When two vehicles meet at cross-roads, it is the rule for that coming from the less important road to give way to the other. All vehicles moving at a walking pace should keep close to the side of the road.

Rumble.—The seat behind a carriage on which the servants sit. (See *Dickey*.)

Rum Pony.—The Isle of Rum pony was first patronised by the then Earl of Salisbury in 1840, and he, being doubtless actuated by the best intentions, introduced a thoroughbred sire into the island with the object of adding quality and generally improving the breed, the result being that the true Rum blood is extinct. Previously, the ponies had run wild on the island, but of late years many of the best specimens have been brought into England, where their merits are warmly appreciated by those who have become possessed of them. They are mostly dark in colour, their heads being rather plain, but their legs, feet, and quarters are usually excessively good, whilst their powers of endurance and sure-footedness are remarkable. The height is, or was, about 14 hands, and their constitutions being so robust, Rum ponies are capable of getting through a good deal of hard work on poor, and sometimes insufficient, food.

Run.—A horse is said to run when his action is a compromise between the canter behind, and the trot in front. It is an awkward-looking, useless gait, and only met with in the case of animals of little merit which have been badly broken. (See *Action*.)

Running Gear.—See *Lock, Under-carriage*.

Rupture, or Hernia, is a trouble which is far beyond the power of any amateur practitioner to dream of dealing with; consequently, the only advice that can be offered on the subject is for the owner of a ruptured horse which suddenly develops the infirmity to seek professional advice at once. The distinction between hernia and rupture is that in the case of the former the intestine protrudes through a natural opening, and in that of the latter through the muscular walls, though not through the skin. Hernia is said to be reducible

Rupture Truss.

when the part projecting can be replaced in its former position, irreducible when this cannot be done, and strangulated when the circulation of the blood is interfered with, causing inflammation to set in, and these may be produced, amongst other causes, by a sudden strain. Foals frequently display the effects of rupture in the region of the navel, this being often a hereditary weakness. In such cases a wide bandage may be passed round the body to keep the protruding part in its place, or a specially designed truss may be used with possibly satisfactory results.

Rust.—A parasitic fungus which grows on plants and grasses in the form of a yellowish powder. It renders the subject of attack unfit for horse's food, and if eaten may lead to serious results. (See *Bunt, Ergot, Mildew, Mouldy Forage, Smut.*)

Rye is not a grain that can be recommended as a food for horses, though heavy breeds occasionally have it given them. (See *Feeding.*)

Rye Grass in the form of hay is regarded as a very good food, for heavy horses especially, in some parts of the country, but it is best given mixed with clover, and under no conditions is equal to the best upland hay. (See *Hay.*)

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Sack.—A sack in corn measure equals 4 bushels. (See *Measures.*)

Sacrum.—A bone consisting of five vertebræ welded together upon which the pelvis rests. The five bones referred to are not united in the case of the foal, but become so as age increases. (See *Croup, Pelvis, Vertebræ.*)

Saddle.—The fit of a saddle counts for more than many owners appear to imagine, or otherwise they would endeavour to provide a properly-fitting one for each horse in their stables. As it is, they are usually perfectly satisfied if the saddle suits them, and forget that if it is unadapted to the horse, sore backs and other troubles are likely to result. Many people, too, are foolish enough to be tempted into purchasing a low-priced saddle under the belief that it is cheap, whereas in reality it is nothing of the sort, as the materials and workmanship are usually second-rate, and the thing soon wears out, but probably not before it has effected some injury upon the horse. Saddles, of course, vary very considerably in weight, from the 5 lbs. polo type to the massive arrangement which provides a comfortable seat for the welter weight.

The names of the different parts of a saddle are, the gullet plate, skirt, twist, seat, cantle, and flaps, which are all described under their respective headings. The flaps, which are the parts forming the covering of the stirrups, may be made either plain or with a roll of leather at the front, which assist the rider in keeping his seat, though they rather spoil the neatness of the saddle. The latter should be made of pigskin in preference to any other sort of leather, but some riders prefer doeskin. (See *Riding*.)

Saddle-cloth.—The protection, usually of felt or leather, worn under the saddle in cases of sore back, or if the stuffing has become worn. (See *Saddle*.)

Safety Bars.—The object of these is to prevent the feet of a rider getting hung up by his stirrups if he should lose his seat, but though there are several designs of these in existence, there are plenty of riding men who believe that if a stirrup is sufficiently large there is no necessity to use a safety bar.

Sallender.

Sallenders.—Cracks which appear in the skin at the fronts of the hocks, the cause being the horse lying with his fore-shoes rubbing against the part affected. (See *Mallenders*.)

Salt.—A little salt in their soft food will often make horses eat, and a pinch should be added to the scalded oats and bran given to foals. (See *Rock Salt*.)

Salt Marshes.—Many breeders of heavy horses approve of turning stock out on marshland which is at times flooded

SADDLE WITH KNEE-ROLL.

SIDE-SADDLE, STRAIGHT SEAT, PLAIN ELAP.

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by the sea, as they consider it beneficial to the constitution, as well as the development of bone and hair on the legs. All marshland, however, affects the quality of the bone, which becomes soft and spongy through the damp, and hence no animals which are intended for fast work on hard roads should be raised on it, though it may prove beneficial to horses recovering from laminitis, or ailments which set up fever in the feet. (See *Rings on the Feet*.)

Salt Water.—In cases where the legs of a horse have become worn from overwork, benefit is often derived from walking them up and down in the sea for half an hour a day, as the sinews become strengthened and the limbs cooled. Many horses are extremely fond of drinking salt water, which, taken in small quantities, may not be harmful, but when a greedy animal is allowed to consume all that he wants to, he is liable to blow himself out, and cause internal inflammation and bladder troubles.

Sand.—Fine sea-sand is used sometimes as a bedding for horses when other and more preferable materials are not procurable. By itself, however, sand is not a good thing to allow a horse to lie upon, as not only may it get into the eyes, but it penetrates the coat and causes unnecessary trouble to the groom. A more serious possibility is that some of it may be swallowed, in which case it may lead to fatal results. When sand has to be used, therefore, a few inches of it should be laid on the floor of the box or stall, the drains having been previously stopped, and a layer of straw spread on the top. (See *Bedding*.)

Sand Cracks are fissures in the walls of the feet, which usually appear at the inside quarter of the fore-foot or toe of the hind one, extending downwards from the coronet. They can cause a great deal of trouble if not taken in time, for they are sure to increase in both length and depth, and, of course, the horse will become lame. Sand crack is the result of the horn of the hoof getting

into a bad state, and hence there is always a prospect of its appearance in brittle hoofs. It comes on very gradually, but when the fissure once appears it quickly increases, until it sometimes extends down to the shoe, the inner parts of the foot being exposed.

Sand Crack.

Treatment.—The first course to take is to check the progress of the crack, and this can generally be done by cutting a groove in the wall of the hoof below the lowest extremity of the fissure. The shoe should be removed, and if the horse can still be worked, the wall of the foot under where the crack exists

should be pared away, so that it will not touch the shoe if it is replaced, and by this course pressure will be removed from the crack, but it will be better to use a bar-shoe. Then the edges of the crack should be pared away, as otherwise they will never unite, and the fissure may be fomented or poulticed in order to reduce the inflammation and encourage any matter which may have formed to drain away. A mild purge should also be administered and the horse placed on a cooling diet. When the pain and inflammation cease, it often occurs that though the horse may be workably sound in other respects, the crack in his hoof constitutes a danger, as it may open and shut. In order to bring the two edges as close together as possible, small notches should be cut near the top of the crack and about $\frac{1}{2}$ inch from it, and long shoeing nails driven through the horn on both sides so as to draw the edges towards each other. The heads of the nails will then be imbedded in the notches, and if the ends on the other side of the fissure are clinched, the hoof will be held together. As a rule, one nail on each side will suffice, but if necessary more may be used. (See *Bar-shoe, Clinches, Hoofs, Poultices, Prescriptions.*)

Sanfoin is a form of green food much appreciated by horses, and, if not given in too liberal quantities to animals in fast work, is undoubtedly beneficial to them, as it assists in keeping the blood cool. (See *Feeding, Green Food*.)

Saturation.—A theory strongly believed in by many breeders is that a mare which is repeatedly served by the same horse and breeds a foal to him each time is likely to produce offspring more and more like their sire every year. It is contended that through the constant interchange of blood that goes on between the unborn foal and its dam, the latter becomes in time saturated by the blood of the horse which is contained in the veins of the foal, and hence the sire possesses a preponderating influence on the latter. The preponderance of opinion is, however, opposed to the correctness of the theory, though Darwin believed in it. On the other hand, Professor Cossar Ewart, who has made a very large number of experiments, using a zebra stallion as a basis, has convinced himself that the idea of a previous sire influencing the later offspring of a mare is an erroneous one, and most practical horse breeders agree with him.

Savageness.—An irreclaimably evil-dispositioned horse is very correctly known as a savage, and such animals being a constant source of danger to all about them are best disposed of by the owner of a working stud. (See *Temper*.)

Sawdust is often used as a bedding for heavy horses and vanners, but it does not look well in a stable, and unless spread thickly on the floor is scarcely a restful substance for them to lie upon. When used, the drains must be stopped up beforehand, else they will become choked, and it is best that the sawdust should be covered by a layer of straw. (See *Bedding*.)

Scapula.—The upper and broader joint of the shoulders.

Schleswig Horse.—This is a breed of heavy horses which resembles the English Suffolk in type, being lighter in bulk and more active than either the Shire or the Clydesdale. It is much in favour for artillery purposes, omnibuses, and street vans. The Breeders' Society, though not founded till 1891, rapidly established confidence by the rigorous tests to which all horses are subjected before entering them in the Stud Book, and the demand for this type of horse is steadily increasing. They are bred in the Duchy of Schleswig, in the territory between Königsau and the Eider river.

Schooling a horse differs from breaking a colt inasmuch as the former term is usually applied to the education of an animal which has already been through the hands of a breaker. All horses are capable of having their action and manners improved, excepting in a few hopeless cases, if proper attention is paid to the development of these qualities, and this is called schooling. The trotting action is doubtless the one which, above all others, is susceptible of improvement, and amongst the various methods of encouraging a horse to step high is to trot him on a straw bed, as he will have to pick up his feet to clear the loose straw. Some trainers make their charges trot over baulks of timber, so arranged as to suit the stride of the animals, but this practice is calculated to injure the horse, and is very rarely adopted and then only in exceptional circumstances. The most common course to pursue is to place weights upon the lower parts of the legs just above the fetlock joints, or to shoe the horses very heavily. The weights are made of india-rubber tubes filled with shot, which can be buckled or otherwise secured to the limb, and no doubt they are most useful in teaching a horse to step. Heavy shoes are now prohibited at several of the principal shows, the committees of which limit the weight of the shoes worn in the judging ring by ponies and yearlings to 1½ lbs. weight apiece, and in the case of all other animals to 2 lbs. (*See Breaking, Schooling a Jumper.*)

SCHOOLING A JUMPER

Schooling a Jumper.—In training a horse to jump, it is best to commence operations while he is quite young by making him cross a low bar to reach his food, gradually raising it till he can clear about 3 feet; when he is old

Champion American jumper, Heatherbloom.

enough to be mounted start again at the lowest jump and take him gently over, increasing the height as he becomes proficient.

It very often occurs, however, that the horse is an adult when he is first put to a jump, in which case the process is not quite so simple. When commencing operations, it is wise to select a steady horse to lead the novice over the rails, taking care to pick one who will not, under any

circumstances, refuse, as this is a bad habit, more easily acquired than got rid of. The older horse instils confidence into the pupil, and thus renders the tuition easier. When commencing operations, take him into an empty field and put him at a 2-foot jump which has wings 12 feet in length, and let him hop over; should he refuse, be most patient, as severity has demoralising effects on timid animals, and gently persuade him to rise to it. If he will not jump, get off and lead him over, and in time he will go with his rider up, when he must be patted and praised. Never allow a horse to turn his head at a jump, as this bad habit is most difficult to eradicate; gradually increase the height of the rail, and as he gets to like the fun, do not permit him to rush at it, but make him walk up to within 3 feet and then rise with his body.

Always remember to practise him at the low jumps as well as the high, and do not hang on to his mouth when rising, but let the hands fall on to the neck, leaving his head and limbs free, so that he will be able to get his hind feet well up to avoid hitting the rail. As the speed is increased, be very careful about the last point, for if he contracts this habit it will result in a fall.

It is the practice of some continental breakers to fix nails in the bar when the horse's education has progressed, and to raise it when his body is in mid-air, so that he will suffer pain unless he tucks his feet well up, but this is a needlessly cruel method which cannot be commended. (See *Breaking*.)

Scottish Ponies — See *Garron, Rum, Shetland, and West Highland Ponies*.

Seat.—The seat of the saddle is the part between the twist and cantle, on which the rider sits. (See *Saddle*.)

Second Thigh.—The second thigh, or gaskin, is the part of the hind-leg which lies between the stifle and hock joints. (See *Hind-legs, Points*.)

Seedy Toe, which either very often succeeds an attack of laminitis, or may result from the clip of the shoe pressing too tightly, or concussion, is usually caused by the horn of the foot at the toe becoming detached from the tip of the coffin bone inside, though in exceptional cases other parts than the toe are affected. Seedy toe does not always produce lameness, though it constitutes unsoundness, and therefore if, on the walls of the foot being tapped at the toe, one of the hoofs gives out a hollow sound, its presence may be suspected.

Seedy Toe.

Treatment.—The unhealthy horn inside the wall must be cut away, and the growth of the healthy horn stimulated by blistering. A bar-shoe should be worn, and there should be no clip on the shoe when the horse first returns to work, which will be after a few weeks' rest in a box, or out at grass. (See *Bar-shoe*, *Blistering*, *Turning Out*.)

Selling.—If a man possesses a good, reliable horse of any variety, he will find no difficulty in disposing of him, if not for quite the price he would like to receive, at all events at a profitable one. Should no purchaser be forthcoming from amongst the circle of his friends, an advertisement will usually secure a customer; or, better still, the animal can be sent to a respectable repository for sale under the hammer. If so, he should be advertised beforehand, so that genuine bidders may be attracted by his perfections, which, of course, will have to be described, and if a warranty can be given so much the better. Otherwise it is possible that private buyers in want of just such a horse may not attend the sale, and if so the dealers who are present are enabled to

secure a very cheap bargain ; but this can be avoided by a reserve being placed upon the horse. (See *Auction Sales, Repositories.*)

Sesamoid Bones.—The two bones at the back of the fetlock. (See *Bones, Fore-legs.*)

Setter.—The apparatus worked with a movable arm, which is placed under the axle of a vehicle to raise the

Setter.

wheels when they are being washed. (See *Carriages, Care of.*)

Shafts.—The best shafts of two-wheeled vehicles are made of lance-wood, which is tougher, lighter, more springy, and generally stronger than other sorts. A rotten or weak shaft is a constant source of danger to those who sit behind it, but, unfortunately, it is not easy for the non-expert to ascertain their quality or the material of which they are made owing to the coating of paint and varnish by which they are covered. Hence the wisdom of dealing with respectable firms, or having a second-hand trap examined by an expert before purchasing. Shafts may be either straight, partially straight, or curved, the latter shape being adopted when a horse is being driven in a trap which would otherwise be too low for him. (See *Carriages.*)

Shaving.—It is the practice of some owners who are desirous of making their horses appear particularly smart to shave the animals after they are clipped. It is not, however, in the least necessary to incur the trouble of so doing, especially as if the desired effect is to be kept up, the operation must be frequently repeated. (See *Clipping*, *Singeing*.)

Sheath.—The covering of the penis.

Shedding Coat.—A horse sheds his coat twice a year, namely, in the autumn and spring. In the former instance the new coat is longer than the old one, whilst in the case of the spring coat the reverse is the case. (See *Coat*.)

Sheds.—All sheds which are erected for the accommodation of horses, whether in a meadow or straw yard, should possess waterproof roofs. If not they are worse than useless, and the animals had better be left out in the open, as a succession of heavy drips will penetrate their coat sooner than rain, and if wetted through they are naturally susceptible of chills. Many sheds are left open, or partially open, in front, and some owners are very careless as regards the manner in which the sides and back are boarded. As a consequence, the shelters are very draughty and the animals contract chills which they would not be so likely to do if out in the open, as a horse can stand cold pretty well, but is liable to be affected by draughts. The best roofs for such sheds are, of course, thatch, slates, or tiles, but these are too expensive for most owners, who will find old-fashioned weather-boards, or plain match-boarding with felt laid on it, amply sufficient for their wants, provided there is a good slope and the felt is dressed with pitch. (See *Hovels*, *Straw Yard*, *Turning Out*.)

Sheet.—See *Clothing*.

Shelter.—Although horses which are out at grass often

SHELTIE—SHIRE HORSE

get along very well without shelter of any kind, unless it be a tree, it is always best to provide them with a refuge from the inclemency of the weather, and a place in which to feed them. (See *Hovels, Sheds, Turning Out.*)

Sheltie.—A term derived from Hjaltland, the original Scandinavian form of Scotland. (See *Shetland Pony.*)

Shetland Pony.—This breed, also known as the Sheltie, is a native of the Shetland Islands, and is noted for its small size and great vigour. These ponies live entirely in the open, and at times of scarcity have often been known to eat seaweed. The recognised height is 10 hands 2 inches, and the colours brown, black-brown, or bay, with an occasional chestnut or piebald. They are exceptionally long-lived and hardy, and work well on poor food, having few equals for endurance; hence the demand that exists for their services by owners of coal mines. The chief characteristics of the breed are a broad and rather short head; large, intelligent-looking eyes; a rather thick neck; a short, broad back; short, heavy-boned legs; and a general air of determination and strength in spite of their smallness of stature, which should not exceed 10 hands 2 inches. In one respect the Shetland is the most fortunate of all the breeds of horses, inasmuch as it has hitherto escaped being the victim of well-intentioned people who, under the guise of attempting improvements, introduce fantastic crosses into the variety they have in hand.

Shire Horse.—Whether the Shire horse is a descendant of the old English war-horse or not is a question that is open to much doubt, as he very probably is; but the fact remains that for a great many years past this country has been famous for its breed of big cart horses, which are now known under the name of Shires. There is no doubt at all, moreover, that the modern Shire horse owes a good deal of its excellence to the sagacity and enterprise of the successive British kings who imported big horses from

LORD ROTHSCHILD'S SHIRE STALLION, BIRDSAILL MENESTREL.

Photo by F. Rabbage.

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abroad to increase the size and development of the native breeds. King John, though not the first monarch to adopt the above plan, was evidently a lover and a good judge of horses, and he brought over from Holland and Flanders one hundred stallions to improve the British horses. Edward II. and Edward III. were also keenly interested in the breeding of horses, and of later sovereigns King Henry VIII. accomplished a good deal in the way of adding to the size of the existing breed, as he issued some strong edicts against permitting small stallions to be allowed on the breeding grounds.

Like all the breeds of British utility horses the Shire suffered from the building of railways ; in fact, some thirty years or so ago—that is, about the end of the 'seventies—the cart horse, generally speaking, was not in a very good position, and might have died out altogether had it not been for the support of some of his admirers, who decided to form a Shire Horse Society. The title was selected with the object of excluding Clydesdales and Suffolks from the benefits offered to the particular variety of heavy horse the interests of which the society was formed to support, and hence the selection of the name Shire horse, which was adopted in order to distinguish it from the others, which have now societies of their own.

Since those days the fortunes of the breed have steadily improved ; in fact, no variety of horse, with the exception only of the thoroughbred, has been fortunate in securing more aristocratic patronage, amongst the most successful breeders of Shires being His Majesty King Edward. Of late years, too, the tenant farmers of England, who, needless to add, have benefited immensely by the increased demand for Shires, have largely devoted themselves to the business of breeding this class of animal, and with immense advantage to themselves.

The head of the Shire should unquestionably be massive ; in fact in some cases it is almost too much so, the result being prominent foreheads and thick jowls, whilst Roman noses, which would be regarded as disfigurements in the case

of other breeds, are not regarded as objectionable features. The forehead should be broad and the eyes of a good size, but not too prominent, the ears are long and rather pointed, the neck very powerful and of moderate length, and the shoulders well supplied with muscle, fairly long and moderately sloped. If they are very long and laid back they are not likely to carry as much muscle as is required in a heavy draught horse, which is not expected to move fast, but to draw very heavy loads. A Shire should possess plenty of girth, long back ribs, and very powerful loins; whilst his quarters must be long, level, and muscular, else he could never move the heavy loads he is called upon to draw. The chest is wide and the fore-legs big and heavy in bone, with big knees and a wealth of hair extending from the backs of these down to the pasterns; and this hair or feather should be silky in texture and free from curl. The disbelievers in hair upon the legs of Shires maintain that it is the cause of grease, and renders its possessor unfitted to work on heavy soils. On the other side, it is asserted that hair is associated with heavy bone such as a Shire horse should possess. The bone of this breed is not, however, of the same density as that of most of the lighter varieties, probably owing to the fact that the heavy clay soils upon which so many Shires are raised is opposed to closeness of grain and hardness of bone; but in the case of horses which are only called upon for slow work the quality of the bone is a matter of less importance than the quantity.

The hind-legs of the Shire are a little inclined to be straight, as this formation is better adapted for starting a heavy load than if the stifles and hocks are bent; the hocks require to be clean and broad in front, and the pasterns all round must be powerful and just of fair length. Practically all colours are found in the Shire horse, but of late years there has been a perceptible increase in the number of chestnuts, whilst the old-fashioned roans have become much rarer.

Shivering is the result of weakness of the nervous system, which exercises an evil influence upon some of the hind muscles of the horse. To some extent it resembles string-halt, as the hind-legs are moved stiffly from the ground, but a shiverer cannot be backed without the muscles twitching considerably, and in many cases the tail being moved up and down. Many shiverers, if they fall or lie down, are unable to get up, owing to the failure of their back muscles, and the disease unquestionably constitutes unsoundness. It is also hereditary and incurable. (See *Jinked Back, Nervous System*.)

Shoeing.—A good deal depends upon the manner in which the foot is prepared for the shoe, especially in the case of young animals which are being shod for the first time. As a commencement, the walls of the hoof will have to be levelled, and here the main difficulty lies, as if the two sides are not level, unnecessary strain is placed on the limb above. In levelling the foot, consideration should be paid to the length and slope of the pastern, for upon these a great deal will depend, as a considerable difference exists between the ways in which a long- and a short-pasterned horse puts his foot upon the ground; whilst naturally the slope of the outside wall in front will also have to be considered, as will the thickness of the foot itself. On no account should great slices of the sole be carved away, as so many farriers delight in doing; all that requires removing is any superfluous new horn that may have recently formed, but the soles should be left as hard as possible, as if too closely pared they become soft, and consequently tender. In fact, the man who follows out the practice of paring away the sole until the surface is so soft that it springs to the thumb is inflicting injury upon the horse. The frog should not be touched unless it is covered by loose flakes of horn, which may be removed, but on no account should the frog itself be tampered with, nor should the farrier be allowed to indulge in the pleasure of opening up the heels, that is, cutting

through the wall where the heels turn inwards and form the bars of the foot, as this absolutely unjustifiable act produces no effect but to weaken the whole structure of the foot. In short, unless the shoeing smith is known to be a capable and conscientious man, no horse's foot should be entrusted to his tender mercy, unless some capable person supervises the shoeing operations. (See *Hoofs, Shoeing Smiths, Shoes, Tips.*)

Shoeing Smiths.—The power of the farrier or shoeing smith is far greater than many people imagine, as upon his efficiency and conscientiousness the whole future of a horse may depend. Unfortunately, however, a very large number of shoeing smiths either are incapable or else indifferent to the responsibilities of the position they occupy, and hence the undoing of many a good horse. Fortunately, some men are real craftsmen, and evince a genuine pride in their work, which it is a delight to the practical horse owner to see them engaged upon, but unhappily their number is limited, and it is difficult to discover them. Far more common is the semi-educated savage who by his roughness scares a foal or a naturally nervous horse to such an extent that it imbibes habits of restiveness which it would never otherwise have acquired. This is the sort of man who hits a horse with his hammer, who slices away the frog and bars of the hoof, who cuts away the walls to fit the shoe instead of making the shoe to fit the foot, who applies the shoe red-hot for minutes at a time, who rasps the outside of the walls and thereby destroys them, and who drives his nails so carelessly that if the horse is not actually pricked, he goes lame in the course of a day or two. The ignorance and incapacity of some farriers are almost criminal, and the worst of it is that the more inefficient they are the more vanity they possess and the greater is the possibility of their surreptitiously developing some pet theory for shoeing their victims, which the owner only discovers when the mischief has been accomplished, as it is impossible to expect him to accompany his horse to the forge on all occasions.

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The only safe course for him to pursue is to hold his coachman or groom responsible for any experiments the shoeing smith may indulge in, and if neither he nor his servants understand the requirements of the case, he ought to obtain the advice of a veterinary surgeon and insist upon having it carried out to the letter. Why it is that the Farriers' Company and other ruling bodies do not offer special inducements to capable shoeing smiths to come forward and, by passing a special test, receive diplomas of efficiency, it is impossible to imagine, as the farrier who won honours of this kind and could publish the fact would be a blessing to owners and earn a fortune for himself. No doubt any man can shoe a horse—somehow—after a little practice, but it requires a clever, brainy, conscientious man to be an artist, and to possess a knowledge of a horse's hoof. Far too common, however, is the smith who earns his night's repose by something accomplished, something done, that will leave its effects upon a horse for many a long day to come, even if it has not ruined him altogether. (See *Shoes*.)

Shoes.—Regarding the pattern of the shoes for horses a very great deal must depend upon the state of the hoofs

Ordinary Shoe.

Shoe for Cutting (the dotted lines show the outline of the hoof).

and the sort of work which the animals are called upon to perform. A heavy shoe has the effect of making its wearer

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step high, but it involves a vast amount of exertion on the shoulder ; calkins are useful in assisting horses to back heavy loads, but bring the feet off the level, and it is desirable that there should always be a clip at the toe, and one at each

Three-quarter Shoe.

Shoe for Cutting and Overreach
(the dotted lines show the outline
of the hoof).

Tip.

Hind-shoe for Overreach, with
bevelled inner edge.

quarter as well, if there is hard work before the horse, lest his shoe may be torn off. The above are general rules for observance, and after this has been done each case must stand upon its own merits, as even the number of nails used must depend upon circumstances, but the fewer the better so long as the shoes remain on the feet. Though very often

more are used, five nails, two on the inside and three on the outside, will be sufficient for a light horse in front, whilst three and four nails respectively will be enough for his back shoes; but under all circumstances the shoes must fit, and the nail-heads should also fit the holes in them. If it is necessary to apply the shoe hot to the foot in order to see how it fits, the iron should be red-hot at the time, as then it has only to touch the horn instantaneously, whereas if it is comparatively cool the contact must be longer and the natural oiliness of the horn will be affected and the feet become dry. On no account whatever should the outside walls of the hoof be rasped, and the clinches should be neat and effective, else injury to the horse's opposite leg may occur. In cases of overreach, speedy cut, and other injuries to the limbs, an alteration in the shape of the shoes often affects a cure, and hence importance attaches to the illustrations of specially designed shoes which are referred to in the descriptions of such injuries. (See *Shoeing Smiths, Tips.*)

Shoulders.—The shoulders of a horse extend from the withers to the front of the chest, and consist of two bones, the scapula and humerus. They should be long and sloping, as a well-laid-back shoulder, and especially a narrow one, represents speed, easy action, and elasticity of movement. A thick shoulder, on the other hand, is more identified with strength than speed, owing to the larger amount of muscle it carries, and hence is usually found in cart horses, whereas the narrow shoulder is associated with the lighter breeds, and particularly the thoroughbred. The shoulder of a heavy horse is not required to be as sloping as that of an animal required for riding or light draught purposes, as a comparatively straight one fills the collar better and keeps it in its place, and the cart horse is not a fast mover. (See *Action, Bones, Points, Speed.*)

Shying is undoubtedly a very dangerous vice for a horse to indulge in, and a confirmed offender is best got rid of,

without a warranty, of course, as even if his rider or driver can control him, it is no pleasure to go about in constant dread of an accident occurring if vigilance is relaxed for an instant. Confirmed shyers are, however, not very common, but there are hundreds of otherwise very serviceable horses which, owing to defective vision or natural nervousness, possess a pet aversion to some particular object, or a certain part of a road, which they always shy at. In many cases this tendency may be reduced, if not cured, by gentleness and firmness, the only thing to do being to insist upon the horse approaching the object that scares him, and having a good look at it. If he can be got to smell it, so much the better, and if the lesson can be repeated a few times he may get over his nervousness altogether. A horse will very often shy suddenly at something he sees which terrifies him, thereby displaying the possession of a gift of self-preservation for which he is scarcely to be blamed, but the usual fate that befalls him is to receive a thrashing, which simply convinces him that his apprehensions were well founded, as he naturally will associate the chastisement with the object that scared him. On the other hand, if he is gently remonstrated with at first—rougher language may be resorted to later—and made to face the imaginary danger, the horse is likely to arrive at the conclusion that he made a mistake, and will therefore be wiser in the future. Each case of shying, however, should be dealt with on its own merits, and it must never be forgotten that no animal is more easily controlled by the human voice than the horse. If the shyer suddenly whips round and refuses to face the cause of his terror, some one will have to try and lead him up to it, but the rider or driver should never dismount in case he may take it into his head to bolt. An effective remedy for shying in the case of some horses is to increase the size of the blinkers so that the animals can scarcely see where they are going, but this, of course, is impossible when riding horses are concerned. Working a shyer in a pair alongside a steady horse is also occasionally the means of gaining him

confidence, and certainly reduces the chances of risk to those behind him. (See *Bolting, Sight.*)

Sickle Hocks are hocks which are too much bent, and are placed too far behind the horse. They are always a sign of weakness, and a deficiency of propelling power. (See *Conformation, Hocks, Points, Propelling Power.*)

Side Bones are bony growths which form above the coronet near the heel, and affect heavy horses far more often

Side Bone from outside.

Side Bone.

than they do light ones. They are undoubtedly a hereditary form of unsoundness, but may arise from concussion, overwork, sprains, and high calkins acting on limbs which are predisposed to contract side bones. It often occurs that they give the horse little trouble, so that he can be worked as before, but in some cases they produce heat, tenderness, and lameness, and the horse is constantly raising his heel from the ground.

Treatment.—Stand the affected limb, or limbs, in cold

water, and keep cold swabs applied. When the inflammation is a little reduced, blister two or three times at intervals of a fortnight. (See *Blistering*.)

Side Rein.—A rein which extends from the bit to a ring in the surcingle. Side reins are used when horses are being

Side Rein.

broken, and often when they are being shown in hand, in order to make them carry their heads well. (See *Breaking*.)

Sight.—Imperfect vision is a cause of many serious accidents, as it may cause a horse to become so terrified as to become beyond control at the appearance of some object which becomes distorted by his bad sight. It is wise, therefore, if any doubts should arise as to the vision of a horse, to have him carefully examined before things go too far, and if the professional report is against him, he should forthwith be disposed of. (See *Cataract, Eyes, Shying*.)

Sinews.—See *Tendons*.

Singeing is not as necessary as clipping is, but it adds considerably to the smart appearance of a horse after he has been clipped, and is useful in removing any ridges of hair which the scissors or clippers may have left on. Moreover, if an animal is singed every ten days or so after he has once been clipped, a second clipping will be unnecessary, and as the former operation, in the hands of a skilful man is quicker than the latter, time will be saved as well as the coat being kept down to a serviceable length. It is much better and safer to singe by means of gas than a naphtha lamp, but sometimes it is impossible to do so. (See *Clipping*.)

Sitfast.—A warble which has been neglected or badly treated is liable to develop into a tumour, usually but not invariably hard, which may cause trouble if not attended to. The only thing to do is to have it cut out by a skilled practitioner, for though the operation is not a very serious matter, it will leave a disfiguring scar if not conducted properly. (See *Warbles*.)

Size.—The size of horses is a rather indefinite term, as it is usually applied to the height, without taking either weight or bulk into consideration. This, of course, is misleading, and it would be far better if the American practice of giving an animal's weight as well as his height were practised in this country. Otherwise, a totally wrong impression may be formed of a horse's size, as a 16-hand animal may be high on the leg, narrow and deficient in bone and muscle, or else very high at the withers, from which point the height is taken, whilst a 15-hand one which is shorter on the leg and lower at the withers may in reality be by far the bigger horse. (See *Evolution, Height, Measuring*.)

Skewbald.—A horse marked with patches of any colour *excepting black* on a white ground is described as a skewbald. (See *Colours, Piebald*).

Skid.—(A) A name for the brake which acts on the wheels.

(B) A vehicle is said to skid when it suddenly moves sideways, owing to the wheels failing to get a proper hold on a greasy road.

Skin.—The skin consists of two porous layers, of which the cuticle or upper one is insensible to pain, whilst the lower one is very sensitive, being a mass of nerves and blood-vessels. The skin is thicker in some places than others, and for the most part the outer one is covered with hair, which requires a regular course of grooming in order to remove the scurf which forms and checks the action of the glands. (See *Grooming*.)

Skirt.—The skirt of a saddle is the loose flap of leather in front of the seat beneath which the girths are fixed. (See *Saddle*.)

Slate Roof.—Slates form an excellent roof for stabling, and in places where they can be procured cheaply are to be recommended for the purpose. Their expense, however, is against them, but in their favour their durability must be mentioned. (See *Roofs, Thatch*.)

Slaughtering.—The most common methods of destroying a horse is by either pole-axing or shooting him. The former is the act of a professional slaughterer; the latter is usually that of an amateur, and the result is often a terrible fiasco. The best way to shoot a horse is to blindfold him and fire from a short distance right into his forehead above the eyes. He will not fall forwards on to his executioner, who should stand close to him. When a horse is down he can quickly and painlessly be despatched by pithing, which consists of driving the blade of a small knife into his vertebræ between the atlas and axis, which see, also *Pithing*.

Sleep.—Some horses, like some men, are very light sleepers, and are disturbed by the slightest noise, the result being that they come out in the morning unrested and unfit for work. When, therefore, a horse seems to be mysteriously languid, it is worth while trying to see if he sleeps properly, and if not to remove him to a quiet stable apart from noisy companions, whose restlessness and vagaries, such as kicking, disturb him. In order to ensure quiet in the stable, ropes or straps should always be used to secure the horses, as the constant rattle of chains is enough to keep any animal awake. (See *Rest*.)

Sleeping Standing.—Some horses never lie down, and the habit is practically incurable, though cases have been known of its being abandoned when the victim of it has been placed in a loose box with a good bed under him. (See *Rest*.)

Sleigh.—A serviceable sleigh for temporary purposes can be arranged by removing the wheels of a pony-trap and placing the body of the vehicle on runners. The difficulty of getting a horse to fit the improvised sleigh owing to the removal of the wheels may be overcome by using bent shafts.

Slings.—In cases of broken knees, or other troubles which affect the limbs and feet, it is often necessary to sling a horse, and as in the case of accidents it is frequently necessary to get his weight off his feet as quickly as possible, it is desirable that a set of slings should always be ready at hand. A simple arrangement is to provide a double piece of canvas strong enough and large enough to sustain the weight of a horse when placed under his body, and having the two top ends, namely, those to which the lines for hoisting him off his feet will be attached, supplied with eyelet-holes for the ropes to go through. The edges of these ends should also be of double or treble thickness, or, better still, a strong

SLINGS

piece of wood or iron should be sewn in them in order to keep them spread and to prevent the ropes pulling through the eyelet-holes, and there should be straps to go round the

Slings.

breast and buttock. Above the place where the horse is to be slung there should be a rafter with blocks attached, so that the ropes of the slings can be run through them, and the horse thus raised a few inches from the ground. Care should be taken to see that the canvas is not wrinkled below

him, as if so the unavoidable discomfort of being placed in slings will be increased; and it may be added that it is necessary that the ropes, blocks, and tackle generally should not only be in good order, but strong enough for the work. (See *Nursing*.)

Slipping.—A horse may slip from many causes, the most common being a frozen or greasy road, or the smooth pavement of a stable. In winter, when the roads are ice-bound, the horses should be roughed, or have frost nails inserted in their shoes, but in other cases careful driving is the only precaution that can be adopted. (See *Frost Nails, Sprains*.)

Smut is a parasitic fungus like soot, which grows on grain and grass, and eventually kills them. As a matter of course, forage that has been affected by smut is unfit for a horse's food. (See *Bunt, Ergot, Mildew, Mouldy Forage, Rust*.)

Snatch.—A term occasionally applied to a modified form of string-halt, which see.

Snip is the small, white mark appearing on the nose of some horses. (See *Blaze, Star*.)

Soaping.—When a horse is nervous and excited he is inclined to sweat, and very frequently a white, soapy-looking froth appears on his neck where the reins come in contact with it, and also between his hind-legs. This is referred to as soaping. (See *Fat, Sweating*.)

Society.—Horses, being by nature gregarious animals, enjoy society, and sometimes become depressed if left entirely by themselves. In such cases a cat or goat, or, if out-of-doors, a donkey, may be introduced to provide them with company, and it is remarkable what strange friendships have resulted from such associations.

Soil.—There can be no doubt that the nature of the soil on which horses, and especially young ones, are kept affects their development to a very considerable extent. Speaking generally, a heavy, cold, clay soil is bad for all horses excepting Shires which flourish on land where the herbage is rich and profuse. For lighter breeds a dry, sandy subsoil underneath a rich loam is excellent, and so are subsoils of limestone and chalk; indeed the limestone districts are preferred by most breeders of blood-horses and hunters. Strong, undrained clay or marl and boggy land are most objectionable if bone of the proper quality is desired. (See *Breeding Studs, Climate, Pasture.*)

Sole of the Foot.—The sole of a horse's foot should be sound and concave, the horn being softer than that of the walls, which renders it more susceptible to bruises and accidents. At the back are the bars, frog, and heels, and its surface when left in a natural condition is rather rough, owing to the presence of flakes of loose horn. These are usually cleared away by the farrier in the case of light horses which are at work, but they have a use inasmuch as they retain moisture and so increase the softness of the horn; at the same time these flakes do not improve the appearance of the horse's foot when lifted off the ground. (See *Bars, Foot, Frog, Hoofs.*)

Sore Backs may result from various causes, such as a badly-stuffed saddle, sometimes with an indifferent rider on the top of it, the chafing of the pad of the harness, or an ill-made roller buckled too tightly over the clothing. Should the horse's blood not be in a good state, a great deal of trouble may arise from a comparatively small beginning, and consequently the matter should be attended to forthwith, and the cause sought for and dealt with afterwards.

Treatment.—Should the skin not be broken—that is to say, if the sore is discovered in time—the swelling which will be present should be fomented and a salt and water lotion applied. If the skin is broken, dress with a lotion carbolic

acid 1 part, sweet oil 20 parts. (See *Fomentations, Galls, Prescriptions.*)

Sore Shins are the result of inflammation of the periosteum, or membrane of the bone, and is the result of the legs of young horses becoming jarred by fast work on hard ground. Hence it is a not uncommon source of trouble in training stables.

Symptoms.—The horse begins to go short and tenderly, whilst the fronts of the cannon bones are hot, and often the legs swell. If not taken in time the trouble is liable to spread to the fetlocks, and the consequences may be serious if they fill.

Treatment.—Rest from hard work, give mild physic, and apply cold swabs to the legs, after which, if there are still signs that the trouble remains, the front of the cannon bone may be blistered. (See *Blistering.*)

Sore Throat.—If there is a difficulty in swallowing and tenderness when touched, the throat, after being fomented with hot water, should be gently rubbed with liniment, to be repeated at intervals. The food should consist of soft things, such as mashes, scalded oats, or sliced roots, and a hood may be worn. This course of treatment, if the horse is kept in a warm, not an ill-ventilated stable, will usually put him quite right in the course of a day or two. (See *Liniments, Prescriptions.*)

Sorrel.—The colour is seldom mentioned now, but in bygone days it was commonly referred to. Sorrel is a pale chestnut, with some hairs of more than one darker shade mixed with it. The colour is frequently referred to as dun nowadays, but it is incorrect to do so.

Soundness.—It is extremely hard to draw a hard and fast distinction between soundness and unsoundness, as in the first

place there are very few horses indeed which could pass an examination if the person making it was anxious to detect some latent infirmity, and secondly, a horse may be quite up to some sort of work, whilst he is unfitted for another. Thus a hunter must be sound in eye, but a stone-blind horse may do very well in harness; or the former's joints may just be able to stand a day's hunting if the going is soft, but if they belonged to a trapper they might not take him a mile on the hard road. Of course there are certain things, such as broken wind, roaring, whistling, cataract, spavin, false quarter, and ring-bone amongst others, which constitute undoubted unsoundness, and in addition to such there are minor forms of infirmity, the existence of which should cause a purchaser to ponder seriously before he buys.

Spanish Fly.—A very useful ingredient of a blister, also known as cantharides. (See *Blistering, Prescriptions.*)

Spanner.—A short, metal instrument used for turning bolts. A spanner should be carried in every vehicle for use in case of accidents.

Spavin, or, to be more explicit, bone spavin, is an enlargement of the inner and lower part of the hock, and may be hereditary, or the result of concussion and hard work, which may set up inflammation and lameness. Rest may reduce the latter somewhat, but a spavined hock is always a stiff one, and the horse will generally be unsound for life.

Treatment.—Rest, a purge, and cooling food. The spavin may have cold bandages applied for a few days to reduce the primary inflammation, after which the hock should be blistered two or three times, allowing at least a fortnight between each. Failing an improvement, the hock must be fired. (See *Blistering, Firing.*)

Spavin.

Spavin shown from outside.

Speed.—The ability of a horse to move fast is, of course, mainly dependent upon his formation, though naturally his condition will have something to do with the matter. In all cases the internal organs must not merely be sound, but be provided with opportunities for discharging their duties properly. Hence, room must be supplied for the heart and lungs to work in, and therefore the chest should at all events be deep, but if too wide the speed will be diminished. A short neck is not conducive to speed; nor are short or heavy shoulders, though the chest of a cart horse is broad, and his shoulders loaded with muscle, but then he is not required to move fast. The back legs and loins have a great deal to do with the speed of a horse, for they supply the propelling power, and hence importance must be attached to the formation of the joints, and the

manner in which the hocks are flexed. (See *Hind-legs, Propelling Power, Shoulders.*)

Speedy Cut.

Speedy Cut is the name given to the injury caused by a horse hitting the inside of a fore-leg below the knee with the shoe of the other leg. Galloping on heavy ground may cause the injury, and so may faulty action.

Treatment.—Rest for a few days and a constant application of cold water bandages. If the wound looks angry, hot fomentations may be applied in the first instance. The horse should be kept on a cooling diet, principally composed of mashes and roots. In some cases a three-quarter shoe should be worn on the foot which hits the other, and a boot should be worn over the seat of injury. (See *Boots, Brushing, Cutting, Overreaches, Shoes.*)

Splash-board.—The leather or wooden panel fixed on the front of a vehicle above the splinter bar or ends of the shafts in front of the driver.

Splinter Bar.—The bar of wood in front of a pair-horse vehicle to which the traces are attached, and to which a square iron frame is fixed for the pole to pass through.

Splints are, unfortunately, very common amongst horses which do fast work upon hard roads, in which case they are the results of concussion, but they may be caused by a blow, or they may be hereditary, as undoubtedly splints run in families. A splint is a small, bony lump on the cannon bone, sometimes situated in the front, in which case it is not likely to cause trouble, and sometimes at the back. In the latter

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instance they attach themselves to the splint bones, and create inflammation of the tendons and ligaments, the result

Splint.

Splint shown from outside.

being pain and lameness. Occasionally they appear near the knee, the movement of which is affected by them.

Treatment.—Rest, cooling food, constant cold bandaging, and a dose of opening medicine. Should the splint show no signs of reduction and the lameness continue, the splint may be painted with iodine twice a day, and if this fails, the limb should be blistered or puncture fired. Of course, however, professional advice should be secured before the latter operation is attempted. (See *Blistering, Firing.*)

Split Pastern.—A minor fracture of the large pastern

bone, the result of getting a foot in a hole, a twist, or concussion.

Treatment.—If the case appears a severe one, the horse should be put in slings; if not, he should be bedded on a thick layer of peat moss. The pastern should be enclosed in a starch bandage, the hollow of the heel having been previously plugged with cotton wool or tow, the horse being fed on a low diet, and an occasional mild purge administered. (See *Slings, Starch Bandage.*)

Split Up.—A horse is said to be split up when his thighs are deficient of muscle on the insides, so that he shows too much daylight between them.

Spoke Brush.—A long, narrow brush with thick, hard bristles, used for washing wheels. (See *Carriages, Care of.*)

Spokes.—The wooden or metal bars which connect the outside rim of the wheel with the centre portion. (See *Felloe, Nave, Tyre.*)

Sponge Pad.—A strip of fine sponge about half an inch thick, fixed between the wall of the hoof and the shoe, is a very useful preventative against concussion, and may be used with benefit to the horse in other cases of lameness. (See *Lameness, Pad.*)

Sporadic Diseases are those which arise from ordinary causes arising from without, such as bad food or exposure. (See *Enzootic, Epizootic.*)

Sprains may be briefly described as injuries to ligaments or tendons, which cause swelling, heat, and tenderness. Should there be a swelling, the seat of the sprain is, of course, easy to discover, but occasionally a lump on some part of the body, accompanied by pain, is mistaken for a sprain, though it may actually be the result of a blow, or

some similar injury. Consequently, it is not always easy for a non-professional man to distinguish between the two, but the effects of a blow will wear off more quickly than those of a strain.

Treatment.—First and foremost, absolute rest is essential for the cure of a sprain, and therefore the less a horse moves for a few days the better it will be for him. Cold water bandages and fomentations should, of course, be applied at very frequent intervals; indeed, if it is possible to do so, the limb should be placed in a pailful of cold water, and kept there for some time two or three times a day. The application of some effective liniment, if thoroughly but tenderly rubbed in, will assist in a cure. (See *Liniments*.)

Springs.—In the early days of carriage-building, even as late as the reign of the Charles, a period at which only royalty and nobility possessed coaches, they were hung upon a perch carriage without springs. Not much inconvenience, however, was felt, as these coaches were seldom used for other than gala occasions, such as when monarchs and their suite visited royalty or high civic dignitaries, and only travelled at a very slow pace. It can easily be understood that all coach-makers of that period were endeavouring to find some mode of suspension which would give more ease and comfort to the riders, more especially as they were at that time all of high degree.

The next development was to fix carved standards at each end of the perch, which extended some 3 or 4 feet beyond the coach body, and suspend the body from the four standards to each of the bottom corners of the body with ropes or leather traces. This was found to give a limited amount of ease to the riders.

The next development was the whip spring, so called from its resemblance of the springs to the top of a whip when the weight of the body was on. These springs were attached to the standards and the leather traces to the top of the spring. The C. spring of the present day is only a

further development of the whip spring, the wooden standards being dispensed with and the steel of the spring being carried forward to the cross-bar of the perch. After the introduction of the elliptic spring this was adapted to the C. spring carriages mostly with a dumb top half, and is the C. under-spring or eight-spring under-carriage which is now used for the highest grade of carriage-building. (See *Elliptic Spring, Perch.*)

Sprung Hock.—A hock is said to be sprung when there is a considerable swelling at the back of it owing to a severe sprain, which usually causes serious lameness, accompanied by fever and considerable pain.

Treatment.—Remove the shoe—as the horse will probably not be workable again for several weeks they had better all come off—apply some cooling lotion, and give a mild dose of purging medicine. Keep on a low diet, and if the case is a bad one put the horse in slings; but it is best to send for professional advice in the first instance if the sprain is a severe one. (See *Prescriptions.*)

Squaring Tail.—Some skill is required to cut the ends of the hairs on a horse's tail perfectly level and without leaving any notches when it is desired to square it. The best way to proceed is to tie a string round the end, and then do the cutting.

Stable Equipment.—The following articles form the necessary equipment of a stable:—two wooden buckets, one body brush, one burnisher, one broom, two or more sets of bandages (flannel and linen), one curry-comb, two or three leathers, a corn sieve, one dandy brush, half a dozen dusters, a manure basket, a corn measure, a comb for mane, paste for harness and saddles, a picker, a pitchfork with blunt prongs, two or three sponges, a shovel, half a dozen towels.

Stables.—The best aspect for a stable is a westerly one,

as then, if there are windows both in front of and behind the horses, they get the morning and evening sun whilst avoiding that of the midday, which is often too warm for them. If they face the east or north they are exposed to cold blasts of air every time the door is opened in the winter, and if their floor stands on a slightly higher level than the ground outside they will be drier. A common fault in the construction of stables is inattention to the importance of proper ventilation, and the drains in many expensively constructed buildings are lamentably defective. As a rule it is the best plan to avoid stabling a horse so that he can neither see nor hear another animal, as a lack of society frequently leads to the development of some undesirable stable vice. Old stables are, as a rule, unhealthy, and not infrequently verminous, especially if they are roofed with thatch that has been allowed to get into a bad state, and no horses should be put in such a place until it has been thoroughly disinfected, lest its previous occupants may have left some communicable disease behind them. (See *Box, Drains, Floors, Light, Roofs, Stalls, Ventilation.*)

Stag.—An American term for a stallion that has been castrated late in life.

Staggers is usually a result of some affection of the brain, but an attack may also arise from indigestion; indeed it is pretty generally accepted that stomach trouble is, as a rule, primarily accountable for both forms of staggers. *Sleepy staggers* is often the precursor of mad staggers, and its symptoms are dulness and loss of appetite, accompanied by drowsiness and an evident difficulty in keeping on his feet. The breathing and pulse are slow, and the little water that is passed is very high in colour. Should the trouble be due to entirely stomachic sources, the stomach swells and a good deal of pus is formed, the other symptoms being the same as the above. The treatment is a strong purgative and an enema to relieve the bowels, and hand-rubbing of the

stomach ; after the purge has worked and its effects passed off, the following drench may be administered three times every two hours and then every six hours. Aromatic spirit of ammonia, 1 ounce, spirit of chloroform, 1 ounce, bicarbonate of potash, $\frac{1}{2}$ ounce, water, $5\frac{1}{2}$ ounces. *Mad Staggers* is often, but not always, preceded by an attack of sleepy staggers, but its symptoms vary very decidedly. The horse is feverish and restless, his pulse is very fast, and he will often throw himself about as if he were mad, whilst his dung is hard and dry and he scarcely stales at all. At intervals he falls into a drowsy state, but the paroxysms soon reoccur, and generally in a more violent form. If the horse can be approached, the same treatment as that recommended for the sleepy form of attack may be applied, and ice or cold cloths may be placed on the head. In all cases the horse should be kept quiet and in a darkened box, but professional advice should be sought for in event of a horse being attacked by mad staggers. (See [*Megrims*, *Sunstroke*].)

Staling.—The act of passing urine. Some horses decline to stale when they come in from work, in which case they will often be induced to do so if a little straw is spread on the ground under them. (See *Heated Horses*.)

Stallion.—The selection of a stallion is a matter of most serious consideration for a breeder of horses, as a mistake may prove extremely costly. As a general rule, the horse to be selected is one who, by his looks, may be expected to remedy the faults possessed by the mare ; but the breeder does not act wisely if he judges by appearances alone. The breeding of a horse, in short, is a most important factor in relation to the selection, for no matter how handsome a stallion may be, there is always a probability that his stock will throw back to some more or less remote ancestor. It is well for the owner of the mare to satisfy himself if possible as regards the sort of foals the sire he would like to use

throws, and also to endeavour to satisfy himself as to whether the blood of the horse is likely to cross well with that of the mare. Many people entertain the belief that the sire has most to do with the temperament of the foal, whilst the mare influences its strength. (See *Atavism, Back Blood, Breeding, Brood Mare, Saturation.*)

Stalls.—Speaking generally, it is better for horses that they should be kept in loose boxes than in stalls, but space has often to be considered, and there are many animals which are best kept in stalls. The least that should be allowed in the way of width for a full-sized light horse—cart horses, of course, require more—is 5 feet 6 inches, but 6 feet 6 inches will allow them to lie down in more comfort, but they will rest better in boxes with their heads loose, and with plenty of room to stretch about in. The depth of the partitions should not be less than 9 feet, and if 10, so much the better, their height at the horse's head being about 7 feet, and at the other end about 5 feet 6 inches, the greater height at the heads being necessary to prevent the horses from biting each other. In many stables there is a space left between the wall of the stable and the inner end of the partition in order to secure ventilation for the stalls, which often in hot weather become oppressively close, owing to no current of air passing through them. (See *Bales, Drains, Floors, Ventilation.*)

Stamina is, undoubtedly, hereditary, but it is capable of being developed to some extent in all horses by judicious training, though it is impossible to transform a non-stayer into a horse which can be capable of negotiating long distances under pressure. A great deal, however, depends upon the speed at which a horse is ridden or driven, as an animal of very doubtful stamina will often get to the end of a long journey in creditable fashion if his strength is judiciously husbanded, and he is indulged with the opportunity of enjoying a blow, and getting his second wind

without being hustled all the way. The possession of stamina, of course, depends a good deal on the question of wind, and therefore any suspicion of unsoundness of the respiratory organs is opposed to staying-power. There must also be plenty of room for the heart and lungs to work in, and hence depth of chest is essential to its presence, whilst pluck, and an easy, smooth action are likewise indispensable. (See *Action, Courage, Speed, Stayer.*)

Standard.—The height of a horse is taken by a standard made out of a straight, upright piece of wood about 6 feet high, and marked upwards from the ground in inches like an ordinary rule, and so shaped that a straight cross-piece, some 18 inches long, can slide up and down it. The horse to be measured must be stood on level, hard ground such as is provided by a flat piece of pavement, boards, or brick-work—soft ground or grass will not ensure accurate results—with the standard alongside him so that the cross-piece can be slid down to the level of the top of his withers. This being done, the distance from the ground to the bottom of the cross-piece where it joins the upright represents the height of the horse, as this can be ascertained by seeing the number of inches on the standard. There are several varieties of standard, all more or less complicated, and some of these are undoubtedly improvements upon the above, which, however, if used by a careful and experienced man, will be found to be accurate enough. It may be added that occasionally horses are very difficult to measure, as some are fidgety, and others crouch when under the cross-piece, so patience must be exercised. (See *Hand, Height.*)

Standing.—When a horse is standing still in harness or saddle he should do so with all his legs placed well under him, and carry himself upright. The practice indulged in by some owners of horses of teaching the latter to stand with their fore-legs stretched out in front and the back ones behind is simply ridiculous. (See *Stretching.*)

STANHOPE PHAETON—STEEPLECHASE

Stanhope Phaeton is a lighter description of mail phaeton body hung upon Stanhope springs, and derives its name from Lord Stanhope, who suggested that mode of hanging

Stanhope Phaeton.

to his coach-builder about the middle of the last century. It is, like the mail phaeton, usually fitted with a leather hood to the front seat, and has a seat behind for servants. These two carriages are always made for a pair of horses.

Star.—The white mark which appears on the forehead of many horses. (See *Blaze*, *Snip*.)

Starch Bandage.—To make a starch bandage, dip an ordinary linen bandage into some liquid starch, and apply to the limb whilst it is wet. When dried it will become hard, and hold the limb as though it were in a splint.

Star-gazer.—A horse which carries his head too high is called a star-gazer; many of such are inclined to shy, as star-gazing is frequently associated with a nervous temperament.

Stayer.—A horse possessed of stamina is referred to as a stayer.

Steeplechase.—A race across a country which includes a

variety of obstacles, either natural or artificial, but on a recognised race-course, is thus described. Originally, no doubt, a steeplechase was a point to point race over a natural and unflagged country, the name being taken from the church steeple which usually marked the position of the winning-post. (See *Point to Point Races*.)

Stepping.—A horse which bends his knees unusually well is described as a stepper, or high stepper, and appreciated accordingly. The gift of high action of this kind is unquestionably a natural one, but it can be developed and improved by artificial means and careful schooling. A high stepper is not a good horse for working purposes, as he is liable to suffer from concussion if the going is hard. (See *Action*.)

Sterility.—A fat mare may often not prove to be in foal, but this fact does not prove that she is a non-breeder, as sterility may be due to either constitutional or physical causes. It is recommended, therefore, should a mare not prove to be in foal, that she should be examined by a veterinary surgeon, as it frequently happens that a minor operation may remove the cause of the barrenness. All mules and hybrids, it may be added, are sterile. (See *Barrenness, Breeding, Brood Mare, Stallion*.)

Sternum.—The breast bone.

Stifle.—The upper joint of the hind-leg.

Stings.—It often occurs that horses are stung by wasps or bees, the result being that they suddenly appear to go mad, and gallop recklessly about. When the cause is discovered, the sting, if left in, should be pulled out with tweezers if possible, and strong ammonia should be applied to the place affected. The horse should be brought in and kept quiet until his excitement wears off, and if the irritation

STITCHING WOUNDS

continues a belladonna lotion may be applied to the sting. In serious cases, or if, unfortunately, the sting is in the mouth, which sometimes happens, professional service should be sent for at once, as a dangerous swelling, especially if the seat of injury is near or in the throat, is likely to appear very quickly, and it may become necessary to insert a tube in the windpipe. (See *Tracheotomy*.)

Stitching Wounds.—Silver wire is a better material for use when wounds have to be stitched up than thread, as the latter is liable to cause inflammation and pus to form, and

Curved Needle, for stitching up wounds.

the wire is easier to tighten or loosen as occasion may require after the operation has been performed. Should the wound be on a fleshy part of the body, it is better to try and close it by bandaging, as the weight of the flesh is apt to cause the stitches to tear through the skin. The best course to pursue when the edges of a comparatively slight wound have to be drawn together is to make each stitch or suture complete in itself. This is called an *interrupted suture*, and consists of drawing each thread by means of a curved needle, and fixing each one independently of its neighbour. To do this the edges of the wound should be brought to as near their natural position as possible, and the point of the needle should be pushed gently through the skin at one side, across the wound, and out at the other side, when the wire should be knotted. Each stitch should be about one inch apart, and the needle should enter the skin on one

Interrupted Suture.

STOPPING THE FEET

side of the wound and leave it on the other half an inch from

Continuous Suture.

the edges, so as to allow for a good hold. *Continuous sutures*, which are stitches resembling ordinary sewing, are not recommended as a general rule, for if one has to be tightened or loosened, the whole may have to be undone; and very much better in every way is the *figure-of-eight suture*, which is formed of a couple of slightly-bent pins run through the edges of the wounds as directed in the description of the interrupted suture, and then kept in their places by soft threads wound round them in a figure of eight. These are very easy to fix, easy to remove, and most efficacious; in fact, in the hands of an amateur practitioner they are to be preferred to the interrupted suture, and in the case of some wounds this is the best of all means for drawing the edges together. The sutures should be carefully examined each day, and if pus is found to be forming they should be removed; if, however, they continue healthy, they may be kept in for about a fortnight, or perhaps less if all is going on well, when they can be removed. It is very little use attempting to close a badly-jagged wound by stitches, as they are likely to pull through, and might have to be long ones, and therefore bandaging is the best treatment for them. Silver pins are the safest to use, but under no circumstances should brass ones be placed near a wound. (See *Cuts, Knots.*)

Figure-of-eight Suture.

Stopping the Feet is a practice of very doubtful value

though some persons entertain the opinion that a stopping of cow dung is most efficacious in cases where the horn of the sole is deficient in moisture and the foot brittle. If the flakes of horn which hang down from the sole are left on they will attract plenty of moisture to the foot, or the horse can be stood on a clay bed ; whilst as an application mutton fat, if melted down, is far superior to cow dung, and can be smeared on the walls of the feet as well as the soles. (See *Clay Bedding, Mutton Fat.*)

Stops.—The pieces of metal which are let into the shafts to prevent the tugs from working too far back. (See *Pad, Tugs.*)

Stoves.—Although it is unnecessary to heat a stable artificially, it is necessary that the coach-house and harness room should be kept fairly warm. The best arrangement to make in the case of small establishments is to have a range fixed up in the harness room, as this will keep the place warm enough during the cold weather, and if there is a boiler attached, a supply of hot water will always be at hand in cases of emergency. A gas stove may be sufficient for the summer, but a coal fire is always best during the winter. An oil or gas stove will suffice for heating the coach-house, though hot-water pipes are preferable.

Strains.—See *Sprains.*

Strangles is an abominable form of disease which usually attacks young horses—those over five years old rarely suffer from it. It consists of a swelling in the channel between the jaws which extends up to the throat, and is accompanied by an offensive, thick discharge of a yellow colour from the nostrils. Owing to the swelling of the glands the horse experiences a difficulty in swallowing, and this, in addition to the rise in his temperature and the discomfort he is enduring, causes him to lose flesh rapidly. Strangles often succeeds a bad cold, but it is undoubtedly “catching,” as if it appears

in one stable in a district other studs are pretty certain to have cases also.

Poultice for Strangles.

Treatment.—Apply hot fomentations and linseed or bran poultices at frequent intervals, in order to induce the glands to form matter, and make the horse inhale the steam of boiling water. Lance when the abscess is sufficiently ripe, keeping the wound open with tow, so as to let it drain. Keep the patient in a warm stable,

and give *Hay Tea*, *Gruel*, and *Mashes*, which see, also *Inhaling*.

Straw, though not a good food for light horses, is often given in the form of chaff and mixed with hay to heavy ones, by which it is consumed without injurious effects, though it is not by any means nutritious, being extremely indigestible. As a bedding, provided that the animals do not eat it, straw is unapproachable, for it looks nice, and is an admirable substance for horses to lie upon. The best of all for the purpose is wheat straw, as it looks and lasts better. A truss of straw should weigh 36 lbs., and a load 11 cwt., 2 qrs., 8 lbs. (See *Bedding*.)

Straw Yard.—A straw yard—that is, a yard covered with straw and having a shed attached to it—is a great advantage to all horse owners, and an absolute essential to breeders, as sick or young horses, and brood mares with their foals, can be placed in these for purposes of observation, or during bad weather, when it might be unwise to leave them lying out. Many owners, however, are careless as regards the draining and cleanliness of their straw yards; indeed in some places the stables drain directly into them, the result being

that the horses using such places are liable to contract foot troubles.

Stretching.—An absurd practice which exists amongst some owners of harness horses, those associated with hackneys being the principal offenders, of teaching their animals to stand with their fore-legs stretched out in front and their back ones behind. The effect is not altogether pleasing, and it reduces the height of a horse by inches. (See *Breaking, Standing.*)

String-halt is the name applied to the upward, jerky movement of the hock, which is observable in the action of some horses when they walk or trot. In some cases one leg is affected, in others both, and the string-halt is usually most noticeable after the horse has had a long rest in the stable. It is undoubtedly hereditary, being the result of a nervous affection which controls the movement of the muscles; it is therefore incurable, and constitutes unsoundness.

Stub.—The expression applied to a wound on the sole of the foot which is caused by the animal treading upon a peg, splinter of wood, or some similar object, and running it into the soft horn or frog of his foot.

Treatment.—If the wound is severe a bran poultice may be applied; if not, careful washing and a few days' rest may suffice to effect a cure, but it should be plugged with tow to prevent dirt entering, and of course the shoe should be removed. (See *Poultices.*)

Stud Farm.—See *Breeding Studs.*

Studs.—See *Frost Nails.*

Stumbling, which is a fruitful cause of broken knees and other accidents, is the result of a faulty conformation of the fore-legs or fore-hand, bad shoeing, or bad horsemanship,

and very often it is a combination of all three. It may occasionally happen, however, that an obstacle, or obstacles, on the road may almost bring a horse down, or he may be suffering from leg weariness and exhaustion, but in such cases a careful, competent coachman will usually succeed in keeping him on his feet. A horse with bad fore-legs and heavy shoulders, or one which plaits his feet when moving, is, however, always liable to fall, and should never be ridden, as it is bad enough to have such an animal in harness. An awkward, under-bred horse as often as not comes down all of a heap after a bad stumble with serious results to himself and those about them, and to prevent him blundering a bearing-rein may provide some assistance. (See *Bleeding, Broken Knees, Cuts, Driving, Lacing, Plaiting.*)

Suffolk Horse.—The Suffolk Punch, as he is generally called, has been bred from time immemorial in East Anglia, but the best modern specimens can be traced back in the lame line to one stallion foaled in 1760. The breed is a compound of Norman blood crossed with Suffolk cart mares, and the colour is invariably chestnut. They are by far the most nimble of the draught horses, and possess a great reputation for docility, activity, and longevity. In appearance they are long, low, and wide, with an attractive and refined head, the stallions having a decidedly masculine look. The neck is very powerful, and the crest strongly defined, the shoulders long but not too sloping, and the middle-piece very bulky (hence the soubriquet "Punch"). The legs are short and flat in bone, which is of the best quality, being very dense in character, and the pasterns short and powerful. In height the Suffolk varies from 15 $\frac{3}{4}$ hands to 16.2 hands, and is of a bright chestnut colour, with no white at all; the legs are free from the hair which distinguishes the other heavy breeds. They are remarkable for their endurance and vitality, and will tug at a dead pull till they drop. The interests of this breed are looked after by a strong society which bears its name.

Sulky is the name applied to the two-wheeled vehicle used in trotting races. It only provides accommodation, in the form of a very small seat, for one person, who sits with his feet supported on the ends of the shafts on each side of the horse. Sulkies for racing purposes have small wheels fitted with pneumatic tyres. (See *Trotter*.)

Summering.—Many owners make it a practice of turning their horses out to grass for a short time every summer, and it is a general custom amongst hunting men to do so, but opinions differ greatly as regards the wisdom of the proceeding. It is at all events very doubtful indeed whether horses which are only out for a short time do not derive more benefit from being summered in a straw yard or spacious box, in which they can get plenty of air and shade, and be beyond the persecution of flies which attack them in the pastures. They certainly lose the advantage of getting the dew upon their feet, though if this is desired they can be turned out of a night and brought in when morning comes ; but their feet can be kept pleasantly cool if their box is covered with tan, which can be kept damp, and if it is thought necessary the yard outside may be spread with clay. If so, the latter must be kept wet during the hot weather, otherwise it will bake as hard as bricks. Of course, too, the horses must receive a liberal allowance of cut grass at this time, though a little hay and corn should also be given. (See *Turning Out*.)

Sun-bonnets are often provided by the owners of horses for the use of their animals in the hot weather, but with very doubtful advantage to their wearers, as the designs of most of these encumbrances are altogether wrong. Most sun-bonnets are made to lie flat to the poll, and so prevent any air from reaching this part, the result being that the good intentions of tender-hearted owners are entirely frustrated, as the horses' heads are kept hotter than they would otherwise have been.

Sunstroke.—Many horses suffer a good deal from the heat of a hot summer, and these, naturally enough, are most susceptible of sunstroke.

Symptoms.—As a rule an attack comes on suddenly—that is to say, if the premonitory symptoms, quick breathing and listlessness, have been unnoticed or disregarded. The horse collapses all in a heap, and generally will lie perfectly quiet and completely insensible. In others he will try to get up, and dash himself about a good deal in his struggles, which, however, rarely succeed in getting him on his legs. That he is unconscious is easily proved by examining his eyes, whilst the breathing is fast and feeble, and the pulse very faint.

Treatment.—Apply the coldest water procurable to his head and spine, using ice if it can be obtained. Means should also be adopted to erect some sort of shade to protect him from the sun without excluding the air, and his head may be fanned by flapping a towel or piece of cloth in front of it. When got back to the stable he should be kept cool and quiet, roots and green food, or mashes, should be substituted for his corn, he should also be allowed plenty of cold water to drink, and if considered necessary, cooling medicine may be administered. (See *Medicines, Prescriptions.*)

Surcingle.—A wide piece of webbing which passes round the body of a horse and buckles on the near side. It is used for breaking and exercising purposes, and can have a crupper attached or not. The ends of the side-reins buckle on to the sides of the surcingle. (See *Breaking, Crupper, Side Rein.*)

Surfeit.—Over-feeding, an impaired constitution, and exposure to the heat of the sun are the most frequent causes of surfeit, which usually takes the form of an eruption of the nature of nettle-rash, causing considerable irritation, and sometimes a loss of hair on the parts affected. In one form of surfeit small blisters appear all over the body, and eventually burst. These often drive a horse half mad by

their itching, and if his teeth can reach them he will bite himself almost to pieces, and this will cause bad wounds.

Treatment.—Reduce the allowance of corn, and give plenty of green food and mashes. Liquor arsenicalis, about 1 ounce per day, may be divided amongst the foods, and the parts may be dabbed with a lotion of vinegar one part, water twenty parts, or a lead lotion may be applied. It is best to keep the horse unclothed, or with a thin linen sheet on under his rug. (See *Prescriptions*.)

Surgical Appliances.—See *Medicines*.

Suspensory Ligament.—This is placed between the two splint bones, under the back tendon, and runs from the two small flat bones of the knee nearly to the fetlock, above which it divides, but the two parts join together about the middle of the front of the pastern. (See *Cannon Bone, Fore-legs, Ligaments, Muscles*.)

Sutures.—See *Stitching Wounds*.

Sweating may be caused by exertion, gross condition, nervousness, or by the deliberate act of an owner who wishes to reduce the fat an animal may carry on his body or neck. In the latter case a heavy sweating rug or hood, as the case may be, is put on the horse, which is moved freely about to make him perspire. Body and internal fat can, of course, be reduced by dieting and physic, but if a horse carries a heavy neck and crest there is nothing that will reduce them excepting by sweating them off by using a heavy hood or hoods. When a horse is in good, hard condition, the sweat which comes from him is as thin as water; but if he is gross it will be quite greasy. (See *Clothing, Exercise, Soaping*.)

Swedes are inferior to carrots and parsnips as a food, though they sometimes are given to sick horses, which enjoy them. If used, it is necessary that they should be sliced

small, and mixed with chaff in the form of chop. Some owners prefer to boil or steam their roots, but unless young or sick horses, or those suffering from impaired digestion, are being dealt with, uncooked roots are preferable, and under any circumstances they should not be overcooked. (See *Feeding, Mangolds, Turnips.*)

Swedish and Norwegian Horses.—These breeds consist of dun-coloured horses from 13 to 15 hands in height. They are strong and hardy, good trotters of the harness type and short-legged. The Finnish horses and ponies very closely resemble them in many respects, but they have no pace.

Swing Horse.—The middle horse in a random, or middle pair in a six-horse, team. (See *Random.*)

T

Tables.—The upper, cutting surfaces of a horse's teeth. (See *Age, Dentistry.*)

Tail.—The tail of a horse should be set on high, and carried rather up in the case of an animal which moves gaily and possesses action. The carriage of an Arab's tail is characteristic of this breed, as it is very high, resembling that of a rocking-horse, and frequently turned a little on one side. (See *Bang-tail, Docking, Fan-tail, Squaring Tail.*)

Tail Guard.—A leather cover which is fastened round the upper part of a horse's tail to prevent him rubbing off the hairs at the root.

Tail Notches.—Some owners of horses running on common land adopt a means of identifying their horses by cutting notches in the hair of the back of their long tails.

These can readily be seen at a distance, and therefore the practice is worthy of consideration. (See *Branding, Ear Marks.*)

Take Off.—The place where a horse commences his jump is so described. If the ground here is soft and treacherous there is a chance of the animal failing to steady himself for the leap. (See *Jumping.*)

Tan is a good substance to lay on the floors of riding schools, as it is soft, springy, and cool to the feet if kept properly damp. For the same reason it is an excellent material to use on the floors of boxes during the daytime when horses are suffering from foot troubles.

Tandem Team.—Of the two horses which make up a tandem team it is usual to find the wheeler a little taller and more powerful than the leader. Hence many perfectly matched pairs are occasionally beaten in a tandem class by animals which would stand no chance against them as a pair. Both the wheeler and leader should possess freedom of action and manners, else a catastrophe may occur at any moment, and on no account is it excusable to drive the bigger horse or the less free mover as leader. (See *Driving.*)

Tapeworm.—See *Worms.*

Tar forms a useful stuffing for the feet in cases of thrush if applied on tow. (See *Thrush.*)

Tares are an excellent green food for all horses, but they must not be given too liberally to the light varieties in full work, though the heavy breeds which move slowly can have them whenever procurable. Hence the value of spring and winter sown crops. (See *Feeding.*)

Tarsus.—The hock, which see, also *Bones.*

Tartar Emetic.—See *Antimony, Poisons.*

Tee-cart is the name given to the very lightest form of mail phaeton body, and is made for one horse only; if equipped with a pair it would, on account of its extreme lightness, look very much over-horsed. It has an open stick front seat, and is never fitted with leather hood. It was originally known as a light Stanhope phaeton. In the early 'sixties of last century, however, a man well known in the driving world went into a coach-builder's shop in Long Acre, and asked if he had a tee-cart in stock. Knowing his business, but not recognising the name of the carriage, he said: "Oh yes; will you look round?" This the customer did, and selected a light Stanhope phaeton, of which the coach-builder afterwards made a speciality, calling it a tee-cart, as the gentleman had done. He advertised it well, and did a prosperous business in tee-carts for many years after.

Teeth.—See *Age, Dentistry, Tables.*

Telegraphy.—See *Atavism, Saturation, Throw Back.*

Temper.—There is no doubt that temper is hereditary, and according to popular belief, the sire has more to do with transmitting his peculiarities to his stock than the dam has. On the other hand, it is quite certain that many horses owe their evil dispositions to bad treatment and teasing, hence the importance of an owner insisting that his animals are dealt with fairly by their breakers and those about them. A horse's memory is prodigious, and the perfectly true stories which are told of an animal remembering an injury done him, and resenting the presence of his oppressor for years, should be sufficient to ensure his being treated properly. Cases are also known of horses suddenly developing a perfectly fiendish temper, which has made it unsafe for people to approach them, but such occurrences are, doubtless, due to the development of some brain trouble. (See *Handling, Memory, Savageness.*)

Temperature.—(A) The normal temperature of a horse is 100.5 degrees.

(B) An average temperature of a stable to keep horses in good health, provided that they are properly clothed, should be about 55 degrees. (See *Clothing*.)

Tendons or Sinews are the inelastic bands which connect bones with muscles. (See *Back Tendon, Cartilage, Ligaments*.)

Terrots.—The rings in the harness, through which the reins pass. (See *Harness*.)

Tetanus.—See *Lockjaw*.

Thatch.—Excepting that it affords a harbour for objectionable insects, thatch is undoubtedly the best of all roofings for stable buildings, as it is cool in summer and warm in winter. At the same time there is a danger of fire when it is used, and it does not wear so well as either slates or tiles, besides which most local authorities in urban districts object to thatch. (See *Roofs*.)

Thermometer.—In order to ascertain the temperature of a horse in cases of suspected fever, a clinical thermometer should be inserted in the rectum, and allowed to remain there for five or six minutes. The thermometer should not be used directly after feeding, and always about the same hour every day. (See *Temperature*.)

Thorax.—The chest.

Thoroughbred Horse.—There is no horse in the world as good as a first-rate English thoroughbred, but it may be added that when he is bad, he is often very bad indeed. Hence the incalculable amount of mischief that has been done by unsound, bad-constituted, vicious, and, generally speaking, undesirable thoroughbred stallions which have been used as crosses for mares of other breeds. Hence also the

risks incurred by owners who avail themselves of the services of a horse concerning which they practically know nothing beyond the fact that he is a thoroughbred, and the desirability of making some enquiries regarding the antecedents of a stallion, and likewise of his parents, before they decide to use him as a sire.

Any attempt to trace the genealogy of the thoroughbred in the space available for the purposes of these notes would be impossible, and consequently it may be briefly remarked that the history of the blood-horse and that of the turf have been interwoven with each other for many generations. It is, moreover, a fact beyond the limits of contradiction that the pre-eminence of the thoroughbred is largely due to the benefits it has derived from crosses with the Arab and Barb. So far back as the days of King John, who, whatever his failings may have been, was a keen judge and an enthusiastic breeder of horses, the value of the Eastern blood was recognised. King Henry VIII., Queen Elizabeth, James I., and Charles II. were all of them enthusiastic horse breeders, and the popularity of the Eastern sires increased during their respective reigns. Queen Anne not only was a great breeder, but a very successful owner of running horses, and it may be added that during her reign the Darley Arabian flourished, he being one of the twenty-three Eastern sires which were imported whilst she occupied the throne. The Darley Arabian was the sire of Flying Childers, whose name figures in the pedigree of many a great horse of modern times. Since the days of Flying Childers the General Stud Book provides full particulars of the breeding of all the horses which are recognised as thoroughbreds, and consequently there is no necessity for referring to that subject here.

The opinion may be expressed, however, that considerable injury is being caused to the British blood-horse by the methods of those owners who pamper their yearlings and ruin their constitutions by injudicious treatment. Whether the modern race-horse is the equal of his predecessors is, of course, a matter of opinion, but he is not called upon to do

so much in the way of running long distances in heats, or roughing it in the course of his journeys from meeting to meeting. No doubt a great change has come over racing, yet probably were he called upon to do the work and endure the hardships which his ancestors underwent, the modern race-horse would emerge triumphant from the ordeal, provided that he was not treated like a hothouse plant in his youth. The fact remains, however, that no such strenuous demands are made upon his energies; nor can it for a moment be questioned that the race-horses of the present day in very many instances do all that is required of them in a style which could not be surpassed. On the other hand, there are horses which win races which can by no stretch of imagination be regarded as desirable animals to breed from, and yet their services are sought after by owners of mares who are tempted either by the lowness of the fees demanded, or by the fact that unthinking persons will bid long prices for foals owing to the fact that they are sired by winners. The patronage accorded to such horses is not good for the thoroughbred, nor does it justify the belief that the British blood-horse of the future will be the equal of the best animals of the present or the past. (See *Hunter Sires*.)

Thoroughpin is a swelling on the back of the hock towards the top, which usually appears on both sides of the joint, rarely upon one; if so it may be confused with bog-spavin by inexperienced persons, though it appears on a different part of the joint. Thoroughpin is caused by inflammation of the tendon, and if the swelling on one side of the hock is pressed, that on the other side will increase in size.

Treatment.—A dose of opening medicine, cooling food, and hot fomentations on the affected part. Blistering often proves effective, but a continued course of iodine dressing will usually produce more satisfactory results. When the horse gets to

Thoroughpin.

work again he should be shod with a high shoe. (See *Blistering, Bog-spavin, Prescriptions, Wind-galls.*)

Throat Lash.—The strap which fastens from side to side behind the jowl of a horse to keep the bridle from slipping over the head. It should not be buckled tighter than necessary. (See *Harness.*)

Throat Latch.—See *Throat Lash.*

Throw Back.—See *Atavism, Back Blood, Telegony.*

Thrush is a disease of the frog, which appears more frequently in the hind feet than in the front ones, and the usual source is wet and dirt, which cause the frog to decompose and give out a very foul smell.

Treatment.—Clean out the foot, removing the diseased parts of the frog, and then cleanse the cleft where the thrush exists by means of a piece of stick and some dry tow or cotton wool, taking care to see that this is thoroughly done. After this the cleft may be dressed with a mixture of calomel and burnt alum, equal parts, the dressing being changed twice a day. In mild cases the burnt alum may be dispensed with, and under any circumstances it is not desirable to continue it for more than a day, after which the calomel alone will suffice. If neither of the above drugs are available, common salt may be used as a dressing in mild cases. When the cleft is thoroughly cleansed, a stopping of tow and tar may be inserted. A dose of cooling medicines will often do good, and the food should include mashes, green stuff, and roots. (See *Prescriptions.*)

Tibia.—The bone of the second thigh, extending from the stifles to the hocks. (See *Hind-legs.*)

Ticks appear on horses which are neglected, or they may

TILE ROOFS—TOURNIQUET

attach themselves to animals turned out at grass. The usual places they appear on are between the thighs, under the mane, and the root of the tail, and occasionally in the ears.

Treatment.—Dress with paraffin or sulphur ointment.

Tile Roofs are a very excellent covering for stable buildings if laid on boards and properly pointed; whilst for sheds the boards may be dispensed with. (See *Roofs*.)

Tiles.—See *Floors, Roofs*.

Tips.—In cases where a horse's heels are affected from some cause, temporary or otherwise, it is desirable that he should be shod with tips, or half-shoes, which do not extend to the back of the walls of his foot. Tips are, moreover, used when it is desired to let the frog come on to the ground, and when used they should be thinned away at the back, so as to prevent their terminating in a thick piece of iron. The toe of the hoof may also be shortened a little. (See *Shoes*.)

Tissues may be briefly described as the name by which different parts of the animal's body which are of the same nature—such as nervous tissue, bony tissue—are referred to.

Tonics.—When a horse has become run down from the effects of overwork or sickness, a tonic is usually required to bring his appetite back, and to build up his system. (See *Prescriptions*.)

Tourniquet.—A tourniquet is an arrangement for stopping

bleeding, and consists of bandages usually placed above and below a wound, and tightened by a piece of stick twisted through it, and kept in its place by twine or tape. It is not always necessary to apply the tourniquet both above and below the wound, as much will depend upon the nature and severity of the injury, as well as its position. If the bleeding comes from an artery, the blood will spurt out, and the tourniquet should be fixed above the wound ; if from a vein, the blood will trickle, and the tourniquet should be fixed below it. (See *Arteries, Bleeding, Cuts, Veins.*)

Tourniquet.

Trace Hook.—The hooks to which the end of the traces are fixed.

Trace Horse.—A spare horse which is stationed at the foot of inclines to assist in drawing vehicles up them. (See *Cock Horse.*)

Traces may be of either leather or chain, the latter only being adapted for cart-horses doing heavy work, though some driving men carry a light chain trace in the boot for use in cases of emergency. Traces of the usual pattern and length are often dispensed with when trotting horses are driven in sulkies or light road waggons on a track, light chains extending from the hames to the stops on the shafts being substituted for them. (See *Hames, Harness, Stops.*)

Trachea.—A long tube, through which the air passes from the larynx to the lungs. It is situated below the gullet. (See *Breathing, Internal Organs.*)

Tracheotomy.—This operation consists of cutting an opening in the windpipe and inserting a silver tube therein,

MR PAUL HOFFMAN'S TANDEM TEAM, RIOT AND GREEN GIRL.

and it is a very desirable one to have performed in the case of an animal whose wind is affected, as it is not dangerous under ordinary conditions, and affords immense relief to the horse. Instances are known of race-horses running within a few hours of undergoing tracheotomy, and one well-known horse possesses two tubes in his throat, owing to the first one not having been placed in quite the right position. The operation, though simple, should be entrusted to a professional man.

Trapezium.—A small bone which sometimes, but not invariably, is situated at the back of the knee.

Treads are wounds on the coronet caused by the horse treading on that part through faulty action, weakness, or when being turned round. If not attended to at once a tread may develop into a very nasty place, especially if dirt or any offensive matter is allowed to enter it.

Treatment.—First cleanse the wound thoroughly, using warm water, which may be poured on to it from above and allowed to trickle through it, then dab it lightly with cotton wool saturated in water. If the wound is a slight one it may be painted over with collodion; but if serious it should first be poulticed and then have a dressing of carbolised oil applied. (See *Poultices, Prescriptions.*)

Trot.—According to the opinions of some people the trot is not a natural gait of the horse, but this may be questioned, especially in the case of the hackney. At all events the trot, whether natural or the reverse, is the gait of every light harness horse, and as such its importance cannot be overestimated. In the trot the fore and back legs of opposite sides are moved, if not actually simultaneously, at all events very nearly so, the result being that during most of the time he is trotting the horse has his near fore and off hind foot, or *vice versâ*, off the ground together. So rapidly, however, are his legs moved, that the evenness of the move-

ment is not impeded, and the feet will come down on the ground to the sound of a regular one, two, three, four, which is music to the ear of the lover of action. An irregular, uneven trot, if not an actual sign of lameness, is included in the category of faulty actions, and renders a horse comparatively valueless, whereas a high mover which goes behind is sure to be worth a very large sum of money. The trot of a horse which is required for working purposes is not by any means so imposing as that of the show horse, but is eminently a more serviceable gait. In the stepper the high action of the knee is not conducive to long wear and tear on the hard road, and in the case of many animals who do not use their shoulders properly it is likely to entail concussion. Very often, too, the high mover does not get away in front and lacks propelling power behind, so that he is slow in his movements and unfitted for work. What is required for the latter purpose is plenty of good shoulder action, and enough bend of the knee to get the feet well off the ground. Knee action that extends the limb well in front of the body after it is bent is the sort that attracts the driving man, as it enables the animal to get over the ground provided that there is sufficient propelling power behind. (See *Free Action, Propelling Power, Round Action, Shoulders.*)

Trotter.—The Trotter is undoubtedly an American production, but it is equally certain that most of the best horses of this breed trace their pedigrees back to the Hackney stallion, Bellfounder, who crossed the Atlantic in the early part of last century. The modern light roadster of America is of a more refined build than the ordinary English harness horse, and, as a general rule, possesses no claim to be regarded as a high actioned animal. On the other hand, he is extremely graceful, and uses his shoulders and hocks superbly, the result being that many Trotters which have proved themselves to be too slow for racing purposes have earned high honours in the show ring in classes where exaggerated knee action is not required. When used for track racing the Trotter is driven

in a light sulky, which barely provides seating accommodation for the driver, who sits with his feet resting on the shafts. Racing sulkies as a rule are fitted with small wheels, furnished with pneumatic tyres. (See *Sulky, Tyre.*)

Tub Cart.—See *Governess Cart.*

Tucked Up.—A horse is said to be tucked up when his back ribs are shorter than usual and the loins behind them are drawn up so that he possesses a wasp-waisted appearance.

Tugs are the parts of the back band of a single harness horse which pass round the shaft in front of the stops in order to support it and keep the harness in its proper place.

Turning Out.—Opinions differ very considerably as regards the wisdom of turning out horses in the summer or at such periods of the year when they are not required for work. Under any circumstances it is necessary to adopt the precaution of not exposing an animal to the effects of cold nights and raw weather too suddenly, if he has been kept in a warm stable and heavily clothed. It is desirable, therefore, that his clothing should be decreased by degrees, and then his hind shoes having been removed he may be given his freedom. One effect of turning him out will be that the horn of his hoof is likely to become brittle and break off in flakes owing to the removal of his shoes, even though he be on wet soil, and the risk is increased in hot weather if he is on land that is baked by the sun. Hence the disinclination of most people to remove the fore-shoes, but if these are left on he must be re-shod in front at least every three weeks, as the horn will be growing all the time and his shoes will begin to pinch him. The back shoes must be taken off for the safety of other animals in the same pasture. Unless the grass is very abundant and of good quality the horses which will soon be wanted for work again should be given a feed of

corn and a little hay each day, and it is most desirable that some shelter should be provided them to take refuge in if they desire to do so from the weather and from the attacks of flies which persecute them during the heat of the day. On coming in from grass a mild purgative, such as aloes, should be administered, but the horses should not be put upon a full ration of dry food, such as corn and hay, all at once, their diet being a mixed one of the above and cut grass or green stuff of some form, so that the change may be gradual. The feet, too, will require attention, a dressing of mutton fat being an excellent thing for the soles and walls. (See *Mutton Fat, Prescriptions, Summering.*)

Turnips are not as beneficial a form of food for light horses as are some other varieties of roots, though cart-horses are largely fed on them. (See *Carrots, Feeding, Potatoes, Parsnips, Swedes.*)

Turpentine.—See *Medicines, Prescriptions.*

Tush.—The extra tooth which stallions and geldings possess. It is situated on the bars of the mouth between the incisor and molar teeth. (See *Age, Bars of Mouth.*)

Tusk.—See *Tush.*

Twins.—A mare rarely throws twins, and still more rarely rears them if she does, but cases have been known of her doing so. (See *Brood Mare, Foals.*)

Twist is the part of the saddle between the skirt and the seat. (See *Saddle, Skirt.*)

Twitch.—A loop of cord at the end of a stick which is used for twisting round the upper lips of fidgety or vicious horses when they are being handled, the object being to keep them quiet.

Tyre.—The outside strip of metal or india-rubber which encircles and protects the felloe of a wheel. (See *Felloe*.)

U

Ulna.—One of the bones of the fore-arm. (See *Bones*, *Fore-legs*.)

Under-carriage is that part of a vehicle which is under the body, and used for its suspension, and is well expressed in the American term of running gear. (See *Lock*.)

Unicorn Team.—A team of three horses, one of which is driven as leader, and the others as wheelers. (See *Pickaxe Team*, *Random Team*.)

Unsoundness.—The question of defining the expression is difficult, the most practical attempt to do so having been made by the Royal Commission on Horse Breeding, who, in their Report of 1890, expressed the opinion that the following infirmities should disqualify stallions, viz., cataract, spavin (bone), navicular, ring-bone, roaring, unsound feet, whistling. The councils of the different spring shows held in London are far more indefinite in their expressions of opinion; in fact, they leave the question of passing or rejecting a horse entirely to their veterinary inspectors. Nor are the societies entirely in unison in their instructions to these gentlemen, as the Shire Horse and Hackney Horse Societies specifically allude to *hereditary* unsoundness as a cause of rejection, whilst the Hunters' Improvement and Polo and Riding Pony Society omit the prefix, and simply adopt the word unsound. (See *Soundness*.)

Uterus.—The womb.

V

Veins.—The tubes which return the blood from the different parts of the body to the heart. The blood in the veins is of a darker colour than that contained in the arteries, and it does not spurt, but trickles out of a wound. (See *Arteries, Bleeding.*)

Ventilation. — The question of sufficient and proper ventilation is one of immense importance to owners of horses, as if a sufficiency of pure air is not admitted into the stable, the health of the animals is sure to suffer, whilst on the other hand horses are peculiarly susceptible to the evil effects of draughts. As a consequence, a great deal of care should be devoted to the ventilation of the building, the best plan being to arrange so that a fresh supply can enter from the bottom whilst the foul air can escape through apertures placed high up. In order to avoid the risks of draught some perforated bricks may be laid in the walls a few inches above the ground, and a wainscotting of wood be fixed inside so that the cold air does not beat directly on the horses, but finds its way upwards over the top of the wainscotting into the building. The ventilators at the top of the stable should also be so arranged that they are not directly over the heads of the horses, and they should be provided with movable shutters, so that they may be closed if the wind blows keenly from the side of the building on which they are fixed. On no account, however, should all the overhead ventilators be kept closed, greatly as the majority of grooms delight in doing so, but they should always be so arranged that a cold draught cannot beat down upon the horses underneath. One curved pipe, or more if the stable is a long one, fixed high up in the roof, is a common and effective means of ventilation, but nothing beats the perforated bricks, provided that they are properly arranged, and the insides so protected that the air is diffused over the building instead of beating down on the horse. In warm weather, of course, the door and windows

of the stable may be left open without injury to the occupants of the stable, but this should not be permitted when the wind blows keenly, especially when the animals come in heated from work. In short, the object of the owner should be to obtain a sufficiency of fresh air, without lowering the temperature of the stable below 55 or 50 degrees, and at the same time protecting his horses from draughts.

Vertebræ.—The vertebræ form the ridge of small bones through which the spinal column runs from the back of the poll to the end of the tail. They number—seven, known as the cervical vertebræ, in the neck; eighteen, called the dorsal vertebræ, in the back; six, named the lumbar vertebræ, in the loins; five, sacral vertebræ, on the croup; and about sixteen in the tail, the number varying. The vertebræ of the tail, moreover, are not all hollow, as the bone towards the tip becomes solid. (See *Bones*.)

Vetches form a much appreciated food for horses, especially for the heavier breeds, but they should be given with discretion, and not too liberally, on all occasions, and especially in the case of animals which are not working, else they are liable to produce Monday Morning Evil. Vetches are at their best as a food when in flower, as after the pods have ripened they become woody. As they possess a tendency to heat if stored in heaps, it is best that they should be given as soon after they are cut as possible. (See *Feeding, Monday Morning Evil*.)

Veterinary Examination.—The average man who buys a horse without first having the animal submitted to a veterinary examination, excepting, of course, in cases where a warranty of soundness is forthcoming from a responsible person, is to be congratulated upon his courage, though condemned for his rashness. Many infirmities are difficult of detection, and especially so in their transient stages, and it is too much to expect a layman to diagnose the symptoms

of disease in a horse. Consequently, it may be briefly but emphatically laid down that the guinea paid to the vet. for examining a prospective purchase, provided, of course, that the gentleman engaged possesses experience and a high reputation, is money well spent. (See *Unsoundness*.)

Veterinary Surgeons.—Like the members of all other professions, the veterinary surgeon has increased his knowledge of late years, so that where one thoroughly capable and reliable practitioner existed a few years ago, there are scores now; whilst, happily for horses, as for their owners, that race of malefactors, the ancient farriers, has become extinct. Still, it is not always that a dependable veterinarian is at hand, in which respect the profession does not differ from any other, and therefore owners should be careful as to whom they call in. Unfortunately, too, opinions often differ as regards treatment, and, as in human cases, the patient often suffers through the attentions of more than one attendant upon him. No doubt, too, there are specialists in the veterinary profession as in the medical, but excepting in very complicated cases the skill of the all-round practitioner will be found equal to combating most diseases and attacks. The horse owner is therefore wise if he avails himself of professional assistance instead of attempting to diagnose his horse's illness and prescribe for the animal himself. Few animals are so utterly worthless as not to justify the expenditure of a little money upon them if they are sick, and even in simple cases it is better to be told that there is no danger, than to risk complications by delaying to seek for proper advice. Hence there has been no attempt made in this work to deal with disease and accidents excepting in the most superficial manner. To do so would be to incur responsibilities which are best avoided, and therefore the object has been to describe the earlier symptoms of diseases, and to suggest a treatment for them which may be useful until the services of the professional man can be obtained, as delays are often fatal. (See *Nursing*.)

Vice.—The definition of vice in horses is not an easy matter, especially as the evils in question are often associated with viciousness, whether correctly or otherwise it is hard to say. Speaking generally, however, the main vices which beset horses are bolting, crib-biting, jibbing, kicking in harness and saddle, rearing, and wind-sucking, all of which are referred to under their respective headings.

Viciousness in a horse is frequently a source of positive danger to his attendant and all others who come within reach of his teeth or heels, as biting and kicking are the chief forms in which it appears. It is pretty certain, too, that biting at all events is a hereditary form of viciousness, and all that can be done to check it is to condemn the offender to the use of the muzzle; whilst kickers may be placed in an end stall, and their tails adorned by the red ribbon, which is the badge of infamy in connection with them. No sensible person will approach a strange horse carelessly, and if he does so and gets hurt he has only himself to blame, as sometimes the very quietest of animals, if suddenly disturbed by a stranger, will let fly a heel or catch hold of him with their teeth. Some horses, too, are perfect savages, which delight in getting a man down, kneeling upon him, and going as far as they can in the direction of worrying him to death with their teeth. The only thing to do with such animals is to blindfold them, and for this purpose the use of the bluff is recommended, and they should never be approached by any one who is unarmed with a stick. (See *Biting, Bluff, Kicking.*)

Victoria is a four-wheeled carriage of the park phaeton type of body, but has a panel driving seat added for the coachman and groom; the principal seat in the body is made to carry two. It is sometimes fitted with a fold-up seat facing the principal seats, and is made to turn up into the body of the carriage when not in use. The first of these carriages was of the cab-shape body, and was built for Her

late Majesty, Queen Victoria, after whom it took its name. The design of the victoria has passed through very many stages, and to-day almost anything built with a driver's seat in front and good seating behind for two persons is called a victoria. It is always fitted with a leather hood behind over the principal seat. This is essentially a park carriage, and is very much favoured by ladies, as it gives every opportunity of displaying their dresses. A victoria can be hung on either C. or elliptic springs.

Vomiting.—It is generally believed that a horse is unable to vomit, but this is incorrect. At the same time cases are so extremely rare that the popular belief is justified by the experience of most horse owners. (See *Quidding*.)

W

Waggon.—See *Road Waggon*.

Wagonette.—A four-wheeled carriage with a driver's seat in front, and in which the occupants sit face to face.

Waler.—A term applied to the Australian horse, which see.

Walk.—The importance of a good walking action can hardly be overestimated, as most people who possess a practical knowledge of horseflesh will acknowledge, but at the same time a really good walker, which moves fast and puts his feet squarely on the ground, is by no means easy to find. In fact, many animals which move truly at this gait are terribly slow, whilst others are perpetually trying to break into a trot, and appear incapable of moving a dozen yards steadily. The latter are of no sort of use to riders and drivers who desire to proceed at a walking pace, as neither they nor their animals get any advantage out of it,

MR C. W. BLACKLOCK'S TROTTER, LANGFORD SWELL.

for the men have to control their animals, whilst the latter, instead of getting a rest, become upset at the restraint placed upon them. A good hack or harness horse can cover five miles an hour, and a heavy horse about three, the true walk consisting of the successive movement of all the legs, leading off with one of the hind ones. No doubt the walk is a natural gait of the horse, and hence surprise may be expressed that breakers and others who are entrusted with the making and schooling of young animals should neglect to cultivate in their charges a form of action which is most useful, especially in a hilly country, or when tired hunters have to be brought back to their stables a considerable distance. (See *Action*.)

Wall Eye.—A light, china-coloured eye which some horses possess. It is not a sign of blindness. (See *Eyes*.)

Walls of the Hoof.—The outsides of the hoofs which extend from the ground to the coronet. (See *Hoofs*.)

Warbles are small lumps which appear on the back as a result, usually, of the saddle pressing. They are sometimes hard, but usually soft at first.

Treatment.—Apply salt and water, or a lotion composed of acetate of lead one dram, sulphate of zinc half a dram, vinegar and water half a pint. (See *Sitfast*.)

Warts usually appear on the lips or eyelids. If possible, the best means to get rid of them is to tie a piece of silk thread tightly round the roots, when they will shrivel up and drop off. In other places they may be removed by the application of caustic, or, if not large, by common vinegar, applied several times a day, but obstinate warts require to be removed by the knife.

Washing.—All horses have to be washed occasionally if their skins are to be kept clean and in good order, and the operation should be performed out-of-doors on a warm

day, soap and warm water being used for the purpose. It is not either necessary or desirable to wash the bodies of horses every time they come in from work, especially if they are heated, and the practice undoubtedly increases the prospects of an attack of mud fever. The face and the parts upon which no hair grows may be sponged over and thoroughly dried, and the feet may be washed, the hollows of the fetlocks being afterwards rubbed over with lanoline or vaseline to prevent cracked heels. (See *Grooming, Heated Horses, Mud Fever.*)

Washing a Carriage.—(See *Carriages, Care of.*)

Water.—Horses which are moved from place to place often suffer from the change of water, which exercises a greater effect upon them than many people imagine. Soft water is the best of all for them, and they prefer it to any other, but whatever they get should be clean. Rain water, if free from impurities, is excellent, and then comes river water, but that drawn from wells may be boiled to soften it if it is very hard. (See *Watering.*)

Water Brush.—A long bristled brush used for applying water to the manes and tails of horses. (See *Grooming.*)

Watering.—The proper time to water a horse is before feeding, as otherwise, owing to the small size of his stomach, his food is liable to get washed out of it before being digested, and colic may result. Many servants, however, prefer to water after feeding, but the other practice should be insisted upon. There is no objection against giving a heated horse water when he comes in from work, but it should not be icy cold, and therefore if chilled, so much the better; in fact, very cold water is always bad for a horse, and therefore it is desirable to have some standing in a pail for use when required, as it will have some of the chill off. Many persons advocate the principle of having water always beside

A RARE INSTANCE OF A MARE BRINGING UP HEALTHY TWINS.

their horses, as they contend that then the animals will drink less, but it is not easy to arrange for a constant supply of clean water which can be kept free of impurities, especially in an indifferently ventilated stable. All horses should be watered the last thing at night.

Weaning.—It is always best to wean a foal gradually, and therefore a commencement may be made by removing the dam for a few hours at a time, and gradually extending the period of separation. By adopting this method there will be less chance of milk troubles for the dam, and the foal will better become accustomed to shift for itself. Every care should be taken to avoid the young animal going back in condition, and hence the importance of providing as far as possible against a sudden check, for if once a foal stops developing it is a very difficult matter to set it going again. Of course long before the date of weaning arrives the foal will be accustomed to feed, but when it is finally deprived of its dam's milk it is very apt to lose flesh, and hence the necessity for providing the more valuable young stock with a sufficiency of nutritious food in the shape of scalded oats, sliced roots, and bran made up into a form of chop, which they enjoy and which benefits them materially. The age at which a foal is weaned must depend a good deal upon circumstances, such as if the dam is required for regular work, the value and forwardness of the young animal itself, and such matters, but unless it has been dropped very late it is best away from its dam by the middle of September, when it should be at least six months old. When weaned, the foal should be placed on good land with animals of its own age, as if allowed to associate with older animals the latter often bully their juniors. (See *Brood Mare, Foaling, Foals, Overcrowding, Pasture.*)

Wear.—A horse is said to wear himself well when he carries his head and tail up, and puts life into his action.

Weaving is a trick which consists of a horse constantly moving his head about from side to side, to the annoyance of his stable companions if he is in a stall, as his head collar rein or rack chain are perpetually on the move. There is no cure for weaving.

Wedging.—See *Beaning*.

Weed.—See *Monday Morning Evil*.

Weight Carrier.—A horse capable of carrying a minimum of 15 stones is described as such. (See *Hunter*.)

Weights on the Foot undoubtedly enable a horse to bend his knees better, and hence the practice of shoeing show harness animals very heavily. In schooling horses for exhibition, weights in the form of india-rubber, or leather tubes filled with shot are often buckled just above the fetlocks. (See *Action, Schooling*.)

Welsh Ponies, thanks to the efforts of the Welsh Cob and Pony Society, have been vastly improved during the past few years. Up to that time the merits of the Welsh pony had been highly appreciated, though nobody could tell exactly what he was, as he had been the victim of many crosses, some of them extremely injudicious ones. Now, thanks to the Society which has established a Stud Book, far more care is devoted to his breeding, and he will be still more improved. The North and South Wales types differ rather from each other, the former being more of a compact cobby stamp, the height varying from 12 hands 2 inches to 13 hands, but, of course, taller ponies are met with in plenty. The usual colours are bay and brown, but greys exist in plenty, the appearance of some of these suggesting very strongly a not remote Arab cross. Welsh ponies possess

WELTER WEIGHT—WHEELS TIGHTENING

plenty of character and style, combined with strength and activity ; whilst those which possess hackney blood step well, but their natural action more resembles that of the hunter. To the above recommendations may be added those of sure-footedness, excellent constitutions, and a great capacity for hard work.

Welter Weight.—A heavy weight. The limit is usually recognised as being 15 stones.

West Highland and Island Ponies.—The ponies running in Mull, Skye, Uist, and the western mainland of Scotland possess a good deal of Arab character, and are supposed to be descended from horses of this blood which were wrecked in the district at the time of the Armada, or else from Arab chargers left behind many years ago by military men who were stationed in these parts. At all events the heads of these ponies, for the most part, are very neat, whilst the shoulders of many of them are better than those of the Arab ; they are, moreover, good all-round ponies, and famous for their staying powers and capacity for carrying weight. The most common colours are black, brown, dun, and grey.

Wheat is not a good grain to give a horse, as it is indigestible. Wheat straw in particular is bad for light horses. (See *Feeding*.)

Wheels.—See *Axle, Felloe, Nave, Spokes, Tyre*.

Wheels Tightening.—After wheels have been in use for a few weeks they often wear loose, the result being that they cause a rattling sound. It is best, therefore, to send a vehicle periodically to the coach-builder to have the wheels tightened and the condition of the tyres seen to.

Whip.—Everybody knows what a whip is, but very few realise the immense amount of harm that a reckless abuse of it may cause. It is impossible to walk down a street without seeing some driver using his whip unnecessarily, not brutally, perhaps, but still with quite sufficient an amount of energy to cause pain to the horse, and to unsettle him. In fact, some animals do far better without any whip at all, and no good coachmen so far forget themselves as to thrash a horse undeservedly. A man who does so should at once be discharged, for if he punishes an animal in public, he is likely to ill-use it in the stable. Consequently, if a servant is heard to allude to a horse being driven on the "whip hand" instead of the off side, it may be worth his owner's while to watch him carefully.

Whip Hand.—A slang term used to signify the off side horse of a pair. The derivation of the expression is as obvious as it is significant. (See *Whip*.)

Whistling, like roaring, is incurable and hereditary, its source being due to a thickening of the membrane of the trachea from the effects of natural predisposition, cold, tight bearing-reins, or similar causes. In sound it is shriller than roaring, and is to be heard whilst a horse breathes out as well as when he draws in his breath, though not to the same extent. (See *Broken Wind*, *Grunting*, *Roaring*.)

White Feet and Legs.—Most people object very strongly to the above, and a general impression exists that the horn of white hoofs is not so durable as the dark colour, which unquestionably looks far better in a gentleman's horse. (See *Colours*.)

Wild Horses.—See *Prejevalsky's Horse* and *Evolution of the Horse*.

Wind.—See *Breathing, Broken Wind, Roaring, Whistling*, also *Flatulence*.

Wind-galls are a result of overwork, but they occasionally appear in young horses which have not been over done, but possess badly-formed legs, and it is noticeable that some families possess a tendency towards developing them. Wind-galls seldom produce lameness.

Treatment.—Cold bandages, applied tightly, and rest, but the trouble generally reappears when work is resumed. (See *Bandages*.)

Wind-galls.

Windows.—All stables should be well lighted, but care should be taken to avoid draughts, and if the windows are so placed that a hot sun can beat down on the horses, the panes may be obscured by a thick coating of whitening. The best form of window is one that is fixed on pivots in the centre of the frame, so that it can be opened by pulling the top part forwards. (See *Stables*.)

Wind-sucking is the act of drawing air into the stomach, with the result that digestion is impaired and the wind often affected. There is practically no cure for this stable vice, which resembles crib-biting, excepting that it is noiseless, and that the horse does not take hold of his manger with his teeth, but usually rests his nose against it. (See *Crib-biting*.)

Wings.—The leather or wooden guards which are placed over wheels to prevent mud splashing on to the occupants of a vehicle.

Winkers.—See *Blinkers*.

Withers.—The ridge of bone at the top of the shoulders behind where the neck meets the back. The withers are much more prominently defined in some horses than in others, and hence the unreliability of many measurements. Fairly high withers are necessary in a riding horse, as they assist in keeping the saddle in its place; whilst lean withers, unloaded by a superabundance of shoulder muscles, are usually associated with easy action. (See *Height*.)

Wolf Teeth.—Additional teeth which appear in some horses in front of the molars. They are not often found in a horse's mouth, and when they appear they should be extracted, as they interfere with the animal's feeding.

Worms.—The existence of these pests can usually be detected by the appearance of the horse, as his coat becomes dull, and stares; he often loses flesh from an otherwise unaccountable cause, and sometimes keeps on perpetually whisking his tail owing to the irritation of his rectum. In the latter case the worms are probably of the so-called thread or needle variety, such as are sometimes seen in the dung, where they look like white threads about 2 inches long. Sometimes these can be removed without physicking the horse, but merely by administering an enema of salt and water, or of turpentine and linseed oil. The larger or round worm is more difficult to evict, and this can only be accomplished by medicine. First keep the horse without food for twelve hours, if he is a full-grown animal, muzzling him to prevent his eating his litter, and then give him a drench of 1 pint of linseed oil and 2 ounces of turpentine. This will usually expel the worms, but it may require more than one dose at intervals of a week to effect a cure. Tapeworms are generally very hard to deal with, and as they will usually only yield to drugs of a dangerous nature it is safest to procure professional advice.

Wounds.—See *Cuts*.

Y

Yeld.—A Scottish term, also known as Eild applied to brood mares which are not in foal.

Yellows.—See *Jaundice*.

Yorkshire Boot.—The Yorkshire boot is a most useful thing of its kind in cases of emergency arising out of brushes, and suchlike injuries. It consists of a piece of blanket or horse cloth about 10 inches wide, and long enough to go twice round the leg above the joint. It is

Yorkshire Boot in course of fixing and complete.

wrapped round the limb whilst open to its full width, and a tape or piece of string is tied round the middle of it, the top half being then turned down so as to make a double thickness round the leg. (See *Boots, Brushing, Cutting, Overreaches, Shoes, Speedy Cut.*)

Yorkshire Coach-horse.— This variety was produced about the commencement of the last century by crossing the thoroughbred with the Cleveland Bay, the object being to produce a big carriage horse possessed of more quality than the latter. In appearance the two breeds resemble each other somewhat closely, but for the fact that the Clevelands are more heavy, and especially about the head. The brown colour is also permissible in the case of the Yorkshire coacher, though it would disqualify a Cleveland Bay, and the dark stripe down the back and stripes on the legs are not met with in the coach-horse, but he should be black up to the knees and hocks. (See *Breeders' Societies, Cleveland Bay.*)

Z

Zebra.—There are several varieties of zebra, the principal of which is Burchell Zebra, the shortest eared of all, and distinguished by broader and lighter coloured stripes than either the Mountain or Grevy's Zebra, whilst it may be added that sometimes there are no stripes on the legs. The Mountain Zebra has rather narrow black stripes in the form of rings all round its face, neck, body, and middle, but on the thighs they are much wider, and run from the point of the buttock towards the stifle. The stripes in the case of Grevy's Zebra are broadest on the neck, and do not extend down to the belly as in the Mountain and Burchell varieties. Zebras will interbreed freely with horses, and both they and their foals are capable of being worked, and are useful in harness, though their shoulders do not slope enough to render them pleasant rides. As they are considered to be proof against the attacks of the tsetse fly they should be extremely valuable in some districts of South Africa where horses die off quickly, whilst as a proof of their adaptability for training it may be mentioned that Herr Wolffe, the well-known circus proprietor, had a team of four which, in addition to

ZEBRA

being driven in the ring, gave a very clever display and manœuvring without any harness or bridles on, as they responded to the crack of the ring-master's whip as readily as many horses. Thanks to the experiments made in breeding by Professor Cossar Ewart, there are a good number of zebra mules in this country, and, according to report, those which have been broken have turned out perfectly satisfactory. (See *Hybrids, Quagga*.)

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