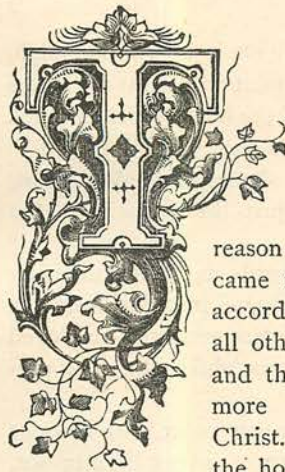


EARLY HISTORY AND HABITS OF THE HORSE.



THE EARLY HISTORY AND ORIGIN OF THE HORSE is wrapped in obscurity and fable, and we really know little or nothing of it, except that we have reason to believe that he first came from Asia, like man, and, according to the Mosaic account, all other animals now existing; and that he was used in Egypt more than 1600 years before Christ. But with the *history* of the horse we shall not encumber this book, which might be enlarged to an enormous extent if this department were entered into at length. Suffice it, then, to discuss the present condition of the horse, and its more recent origin, in addition to his general habits.

THE HABITS OF THE HORSE, in all countries, and of all varieties, are pretty much alike. Wherever he is at large, he is bold, but wary, and easily taking note of the approach of man, to give him as wide a berth as he possibly can, or rather show him a clean pair of heels. Wild horses exist to the present day

in the interior of Asia and in South America. But both the horses of the Tartars and those of La Plata are descended from the domesticated animals, and can scarcely be called wild in the ordinary acceptation of the term. From their constant state of liberty, and their roving habits, in order to obtain food and water, they are inured to fatigue, and can bear an enormous amount of long-continued fast work, without failing under it, and without that training which the domesticated animal must have. The walk and the gallop are the horse's natural paces, and all others are acquired; but nothing can exceed the fiery animation and elegance of movement of the free horse; and in these two paces art has done nothing to improve his form, except, perhaps, in slightly increasing the speed of the latter. In all countries, and in every age, the horse feeds upon grain or grass, though it is said that in Arabia he is occasionally supported upon camel's milk, when food such as he usually lives upon is not to be had.

It may be useful to specify the terms employed to describe the principal parts of the horse. These details will not prove altogether superfluous, as some of the words we are about to explain not unfrequently occur in conversation.

The two parts of the head of the horse which correspond to the temples in a man are above the eyes. The eyes themselves have a loose crescentiform fold of the conjunctiva at the inner angle, often errone-

ously called *membrana nictitans*, but it neither performs its office or possesses its muscular apparatus. The orbit, which is formed of seven bones, four cranial and three facial, contains the globe of the eye, on the inner angle of which is situated the *haw*. The *eye-pits* are deep indentations which lie between the eye and the ear, above the eyebrows on each side.

The *face* is the front of the head from the eyes to the nostrils; this part corresponds to the upper part of a man's nose. This name is, however, generally applied to that portion that surrounds the curl or centre on the forehead from whence the hair radiates.

The neck of the horse is designated by the word *crest*; it is comprised from one end to the other between the mane on the upper side and the gullet on the lower. The *fore-lock* is the portion of the mane which is on the top of the head and falls over on the forehead between the eyes.

The *withers* is the spot where the shoulders meet up above, between the back and the neck, at the point where the neck and the mane come to an end.

The *chest* is that part which is in front between the shoulders and below the throat.

The *back* commences at the withers and extends all along the spine as far as the crupper. When the horse is fat, the whole length of the spine forms a kind of hollow which is said to be *channeled*.

The space which is included within the ribs is called the *barrel*; the name of *stomach* is also given to the lower part of the body which joins the *os sternum* and the bottom of the ribs.

The *flanks* lie at the extremity of the stomach and extend as far as the hip-bones. The tail is divided into two parts: the stump or *dock*, and the hair.

The upper part of the front leg of the horse is called the *shoulder* although it corresponds with the fore-arm in a man; the *fore-arm* follows it lower down.

The joint which is below the fore-arm is called the *knee*; it corresponds to the place of the wrist in man, forms an angle turning inwards when the leg is bent.

The *shank* forms the second portion of the fore-leg; it commences at the knee-joint, and corresponds to the *metacarpus* in man.

Behind the shank is a tendon, which extends from one end to the other, and is called the *back-sinew*.

The *fetlock-joint* is the articulation immediately below the shank.

The *fetlock* itself is a tuft of hair covering a sort of soft horny excrescence, which is called the *ergot*.

The *pastern* is the portion of the leg between the fetlock-joint and the foot.

The *coronet* is an elevation lying below the pastern, and is furnished with long hair falling over the hoof, all round the foot.

The *hoofs* form, so to speak, the nails of the horse, and consist of a horny substance.

In order to describe the parts which make up the hind legs of the horse, we must go back to the haunches. Each of these contains the *femur*, and corresponds to the thigh of a man. It is, therefore, the thigh of the horse, which is joined on to the body, and bears the name of buttocks. It is terminated below and in front by the *stifle* which is the joint of the knee containing the knee-pan. It is situated below the haunch, on a level with the flank, and shifts its place when the horse walks.

The highest part of the hind leg, which is detached from the body, is called the *thigh*, or *gaskins*, and corresponds to the leg of a man. It extends from the stifle and lower part of the buttocks down to the *hock*.

The hock is the joint which is below the thigh, and bends forward. This joint represents the instep in a man; the hinder part of the hock, which is called the point of the hock, is the *heel*.

Below the hock are the shank, the fetlock-joint, the pastern, and the foot, just the same as in the fore-legs.

We will now say a few words as to the diversity of color in the coat of the horse, in order to fix the meaning of the terms which are generally employed to designate the various hues which the coat presents.

Bay is a reddish nut-brown color, with various shades. *Dark bay* horses are of a very dark brown, almost black, except on the flanks and tip of the nose, where they are of a reddish color. The *golden*, or *light bay*, is a yellow sun-light hue. *Dappled bay* horses have on their rumps spots of a darker bay than on the rest of their bodies. In bay horses the extremities, the mane, and the tail are always black.

There are three kinds of black horses: the *rusty black*, which is of a brownish tinge, more or less conspicuous in various lights; the *black*, and the *coal-black*, which is the darkest of all.

Dun-colored horses, of which there are several

shades, are of a yellowish-sandy hue ; the mane and tail of these are either white or black. Some of the latter have a black line along the vertebræ, which is called a *mule's*, or *eel-stripe*.

Chestnut is a kind of reddish or cinnamon-colored bay. There are several shades of it, among which are the *bright chestnut*, which is the color of a red cow's coat ; the *common chestnut*, which is neither dark nor bright ; the *bay chestnut*, which verges upon the red ; the *burnt chestnut*, which is dark, and nearly approaches black. Some chestnut horses have white manes and tails, others black. The *roan* is a mixture of red and white.

Gray horses have white hair mixed with black or bay. There are several modifications of this color ; the *dappled-gray*, the *silver-gray*, the *iron-gray*, etc. Dapple-gray horses have on the back and other parts of the body a number of round spots, in some cases black in others of a lighter hue ; these spots are somewhat irregularly distributed. Gray horses as they increase in age become lighter in color, ultimately becoming white.

Piebald and *skewbald* horses are white, with large irregular spots and stripes of some other color irregularly arranged. The different kinds are distinguished by the color that is combined with the white, as the *piebald* proper, which are white and black ; the *skewbald*, which are white and bay ; the *chestnut piebald*, which are white and chestnut.

The horses which have small black spots on a white or gray coat are called *flea-bitten*, particularly prevalent in India among Arabs.

We have hitherto considered the wild and domestic horse in common, both as regards their structure and their color, in short, their outward appearance generally, without noticing the different breeds, which must soon occupy our attention. But before we enter upon the study of the various equine races, it is necessary to give a short explanation as to the way in which the bit regulates the paces of the horse. By this we are led to speak of the construction of the mouth, a knowledge of which is most useful.

The horse either walks, trots, gallops, or ambles.

The paces of the horse are essentially modified by means both of the bit and spur. The spur excites a quickness of movement ; the bit communicates to this movement a due amount of precision. The mouth of the horse is so sensitive that the least movement or the slightest impression which it receives warns

and regulates the motion of the animal. But to preserve the full delicacy of this organ, it is highly necessary to treat tenderly its extreme sensibility.

The position of the teeth in the jaw of the horse affords to man the facility which exists in placing a bit in its mouth, by which instrument this high-spirited and vigorous animal is broken in and guided. Let us, therefore, in the first place, study the arrangement of its mouth.

There are in each jaw six incisors, or fore-teeth, followed on either side by a tush, which is generally deficient in mares, especially in the lower jaw. Next comes a series of six grinders on each side in both jaws ; these teeth have a square crown, marked with four crescents, formed by the *laminae* of enamel which are embedded on them. Between the tushes and the grinders there is a considerable space called the *bar*, which corresponds to the angle of the lips ; and it is in this interval that the bit is placed.

It is also by means of the teeth that we are enabled to know a horse's age—a knowledge which is of the highest utility ; for a horse increases in value in proportion as he approaches maturity, again decreasing in worth as he becomes older. Up to nine years the age can be determined pretty accurately by means of the changes which take place in the teeth.

The foal, at his birth, is usually devoid of teeth in the front of the mouth, and has only two grinders on each side in each jaw. At the end of a few days, the two middle fore-teeth, or *pincers*, make their appearance. In the course of the first month a third grinder shows itself, and in four months more the two next fore-teeth also emerge ; within six and a half or eight months the side incisives, or *corner teeth*, show, and also a fourth grinder. At this period the first dentition is complete. The changes which take place up to the age of three years depend only on the fore-teeth being worn away more or less, and the black hollows being obliterated gradually by contact with food. In thirteen to sixteen months the cavities on the surface of the *pincers* are effaced ; they are then said to be *razed*. In sixteen to twenty months the intermediate fore-teeth are likewise *razed*, and in twenty to twenty-four months the same thing takes place with the *corner teeth*.

The second dentition commences at the age of two and a half or three years. The milk-teeth may be recognized by their shortness, their whiteness, and the construction round their base, called the *neck* of

the tooth. The teeth which replace them have no necks, and are much larger. The *pincers* are the first to fall out and be replaced by new ones. At the age of from three years and a half to four years the intermediate fore-teeth experience the same change, and the lower tushes begin to make their appearance. The *corner teeth* are also renewed when between four and a half to five years; the upper tushes likewise pierce the gums, and about the same date the sixth grinder shows itself.

A depression, or small hollow, may be noticed on the surface of the crown of the second growth of fore-teeth, just as in the milk-teeth, and these hollows are gradually worn away in the same fashion.

The *pincers* of the lower jaw lose their cavities when the horse is five or six years old; the intermediate fore-teeth are the next to *raze*. The marks in the *corner-teeth* are obliterated at the age of seven or eight years. The process of destruction of the marks in the upper fore-teeth goes on in the same order, but more tardily.

When all these various changes have taken place, the horse is looked upon as *aged*, because the teeth no longer furnish any certain indications as to the age of the animal. Only approximate inferences can now be drawn from the length and color of the tusks, which become more and more bare and projecting from the gum, etc.

The domestication of the horse appears to date back to the very earliest period of his appearance on earth; and as this animal adapts itself to every necessity, every want, and every climate, its subjection has resulted in a considerable number of races, distinguished by more or less prominent characteristics of shape, strength, temper, and endurance. Although generally intelligent, affectionate, and endowed with considerable powers of memory, these qualities in the horse are essentially modified by education and climate. And for the full development of his intelligence and his high qualities, it is requisite that man should be his companion and his friend, as well as his master, but never his tyrant. Under the whip of an unfeeling driver, the horse becomes brutalized, and rapidly degenerates, morally even more than physically.

The attachment of the horse for those who treat it kindly is a well-known fact.

The influence of memory on the horse is shown by the sense it retains of injuries and ill-treatment it

has suffered. Many a horse is restive with persons who have misused it, while perfectly docile with others, proving a consciousness of good and evil, and a natural insubordination against tyranny and injustice.

PRESENT VARIETIES OF THE HORSE.

THE *Arabian* is still one of the most distinct varieties of this noble animal, and also one of the most prized, being eagerly sought for by Turks and Christians in Asia, Southern Russia, India, and even in Australia. In his native deserts he is still sometimes to be seen in a half-wild state, though most probably owned by some of the "dwellers in tents" peculiar to that region. But it is the more domestic breed with which we have chiefly to do, and which is carefully preserved in a pure state by the chiefs of the various tribes, though it is supposed not so free from stain now as was formerly the case. The head of the Arab is the most beautiful model in nature, giving the idea of courage, tempered with docility and submission to man, better than any other animal, and even more so than the dog. It is seldom, perhaps, that so beautiful a frame exists; but examples are not wanting of such a union of elegance with perfectly good and useful points. The length and muscularity of the fore-arm are also remarkable, and the setting on of the tail is peculiarly high—points which have generally been transmitted to our thorough-bred horses descended from Arabian blood. Many imported horses of this breed are exceedingly wicked and full of tricks, but in India, as a rule, he is quite the reverse. To the modern sportsman also he is valuable, because he faces the elephant and the tiger better than any other breed. In height he is generally a little under fifteen hands; and in color either bay, black, or gray. It is said that there are three distinct breeds of Arabians even now—the *Attechi*, a very superior breed; the *Kadischi*, mixed with these, and of little value; and the *Kochlani*, highly prized, and very difficult to procure. If this is true, it may account for the very different results produced by breeding from modern Arabs and those introduced in the eighteenth century.

The *Barb* is an African horse, of smaller size but coarser make than the Arabian, and evidently fed upon more nutritious food. As his name implies, his native land is Barbary; but there is always great doubt about the particular breed to which imported horses belong, because they are carried considerable distances from their native plains, and are also even then much mixed in blood. It has frequently been said that the Barb is the progenitor of one root of the best English stock, and that the Godolphin Arabian, as he was called, belonged to this blood; but the disputed point cannot possibly be settled, and there seems only one argument in favor of the supposition, founded upon his enormously high crest; while his superior size, being 15 hands high, argues just as strongly in favor of Arab descent. But the Spanish horse is no doubt descended from the Barb, this breed having been carried into Spain by the Moors when they overran the country; and, as the appearance of the Spanish horse is totally opposed to that of the descendants of Godolphin, it is a still stronger proof of his Arabian ancestry, or, at all events, an argument against his claim to Barbary as a native clime.

The **Dongola** horse is another African variety, of a much larger size than either the Arab or the Barb, but more leggy. I am not aware that any of this breed have reached this country.

The **Persian** is a small-sized horse, and quite as elegant as the Arabian, but not nearly so enduring.

The **Turkooman**, again, is a larger breed, but without the elegance of form of the Arab and Persian. They are light in the barrel, and leggy, with coarse heads and ewe-necks; yet they are endowed with very stout and lasting qualities, and they are said to travel very long distances without distress. This is only another instance of the oft-quoted adage, "that the horse can go in all forms."

The **Cossack** horses are reared at liberty, and in large herds, and they were long said to be, in consequence of this fact, of unrivaled speed and stoutness.

The **Turkish** horse is supposed to be nearly pure Arab, with a cross of the Persian and Turkooman. He is a very fine, high-spirited, and elegant horse.

The **East-Indian** and **Australian** horses are of various mixed breeds, some being Arabs, some Persians, and others Turks and Barb; while others again are of English blood, but these degenerate rapidly, and though serviceable in crossing with the Arabian or the Barb, yet they cannot long be maintained in their original purity without injury.

The **Belgian** and **Dutch** horses for slow work are very serviceable. They are, however, most of them too heavy and lumbering for anything but machiners, and even in that department they require care not to over-drive them.

The **Norman** horse, again, is a much more hardy and compact animal. He is, however, gifted with an excellent constitution, and with legs and feet which will stand rattling to any extent. These horses are generally low and short-legged, as compared with the Belgians.

The **Spanish** horse is much crossed with the Barb, and has the good head and neck of that breed, but coupled with a weak and drooping hind-quarter and a very light middle-piece. The shoulders and legs are, however, good.

The **American** and **Canadian** breeds vary a great deal, and are made up of the original Spanish stock crossed with English, Arabian, and Barb importations. Climate, however, has done much for them; and they have all the wiriness of frame and elasticity of muscle which their masters possess. As trotters they are unrivaled, and in endurance stand very high; but they are not remarkable for beauty, though not showing any peculiarly unsightly points. Some of the best breeds of horses have been imported by us, especially in Virginia, where Tranby, Priam, and many others have done good service. Our importers have always been careful to select *sound* as well as stout blood, and have not hesitated to invest large sums in order to procure it.

The **English Thorough-bred**.—England is indebted to the Stuarts for the first great improvement made in the breed of her horses, James I. and Charles I. having introduced the Arabian blood, and Charles II. laying the foundation of her present breeds by importing several mares (called Royal Mares, from their master), to which may be traced the celebrated horses of the latter end of the last century, and some of her

best modern breeds. Numerous Eastern horses were also imported at various times.

The **Thorough-bred** horse is intended for racing only. The *height* of the race horse varies from 15 hands to 16½ hands, or even 17 hands; but the general height of our best horses is about 15 hands 3 inches.

The *head* and *neck* should be characterized by *lightness*, which is essential to this department. Whatever is unnecessary is so much dead weight, and we know the effect of 7 lbs. in impeding the horse over a distance of ground. Now 7 lbs. are easily bestowed upon a neck which may differ in at least 20 or 30 lbs. between the two extremes of lightness and excessive weight. Thus, it may be considered as indubitable that whatever is met with in the head and neck, which is not necessary for the peculiar purposes of the race horse, is so much weight thrown away, and yet it must be carried by the horse. Such is the general character of this part; but, in detail, the *head* should be lean about the jaw, yet with a full development of forehead, which should be convex and wide, so as to contain within the skull a good volume of brain. Supposing this fullness to exist, all the rest of the head may be as fine as possible; the jaws being reduced to a fine muzzle, with a slight hollowing out in front, but with a *width* between the two sides of the lower jaw where it joins the neck, so as to allow plenty of room for the top of the windpipe when the neck is bent. The ears should be pricked and fine, but not too short; eyes full and spirited; nostrils large, and capable of being well dilated when at full speed, which is easily tested by the gallop, after which they ought to stand out firmly, and so as to show the internal lining fully. The *neck* should be muscular and yet light; the windpipe loose and separate from the neck—that is, not too tightly bound down by the *fascia*, or membrane of the neck. The crest should be thin and wiry, not thick and loaded, as is often seen in coarse stallions, or even in some mares. Between the two extremes of the ewe-neck and its opposite there are many degrees, but for racing purposes we should prefer, of the two, the former to the latter; for few horses can go well with their necks bent so as to draw the chin to the bosom; but here, as in most other cases, the happy medium is to be desired.

The *body*, or *middle-piece*, should be moderately long, and not too much confined between the last rib and the hip bone. So long as the last or back-ribs are deep, it is not of so much importance that they should be closely connected to the hip-bone, for such a shape shortens the stride; and though it enables the horse to carry great weight, yet it prevents him from attaining a high rate of speed. The *back* itself should be muscular, and the hips so wide as to allow of a good development of the muscular department. The *withers* may rise gently, but not too high, with that thin razor-like elevation which many people call a good shoulder, but which really has nothing to do with that part, and is only an annoyance to the saddler, who has to prevent its being pinched by the saddle. The *chest* itself should be well developed, but not too wide and deep: no horse can go a distance without a fair "bellows-room;" but, supposing the heart to be sound and of good quality, the amount of lung will suffice which may be contained in a medium-sized chest: and all above that is wasted, and is

extra weight. If the chest be too wide, it materially affects the action of the fore-legs, and, therefore, in every point of view, theoretically and practically, there is a happy medium between the too great contraction in this department, and the heavy, wide, lumbering chests sometimes seen even in the thoroughbred race horse, especially when reared upon rich, succulent herbage, more fitted for the bullock than the Eastern horse. In the formation of the *hips*, the essential point is length and breadth of bone for muscular attachment, and it matters little whether the croup droops a little, or is pretty straight and level, so that there is a good length from the hip to the haunch-bone; the line between which two points may either be nearly horizontal, or form a considerable angle with the ground; but still in both cases it should be a long line, and the longer it is the more muscular substance is attached to it, and the greater leverage will the muscles have.

The *fore-quarter*, consisting of the shoulder, upper and lower arm, and leg and foot, should be well set on to the chest; and the shoulder-blade should lie obliquely on the side of that part, with a full development of muscle to move it, and thrust it well forward in the gallop. Obliquity is of the greatest importance, acting as a spring in taking off the shock of the gallop or leap, and also giving a longer attachment to the muscles, and in addition enabling them to act with more leverage upon the arm and leg. The *shoulder* should be very muscular, without being overdone or loaded, and so formed as to play freely in the action of the horse. The point of the shoulder, which is the joint corresponding to the human shoulder, should be free from raggedness, but not too flat; a certain degree of development of the bony parts is desirable, but more than this leads to a defect, and impedes the action of this important part. The *upper arm*, between this joint and the elbow, should be long, and well clothed with muscles; the elbow set on quite straight, and not tied to the chest; the *lower arm* muscular and long; knees broad and strong, with the bony projection behind well developed; legs flat, and showing the suspensory ligament large and free; pasterns long enough without being weak; and the feet sound, and neither too large nor too small, and unattended with any degree of contraction, which is the bane of the thoroughbred horse.

The *hind-quarter* is the chief agent in propulsion, and is therefore of the utmost consequence in attaining high speed. It is often asserted that the oblique shoulder is the grand requisite in this object, and that it is the part upon which speed mainly depends, and in which it may be said to reside. This is to some extent true, because there can be no doubt that with a loaded shoulder high speed is impracticable; for, however powerfully the body may be propelled, yet when the fore-quarter touches the ground, it does not bound off again as smartly as it ought to do, and the pace is consequently slow. For the full action of the hind-quarter two things are necessary, viz.:—first, length and volume of muscle; and secondly, length of leverage upon which that muscle may act. Hence, all the bones comprising the hind-quarter should be long, but the comparative length must vary a good deal, in order that the parts upon which the muscles lie may be long, rather than those connected with the tendons, which are mere ropes, and

have no propelling power residing in them, but only transmit that which they derive from the muscles themselves. Thus, the *hips* should be long and wide, and the two upper divisions of the limb—viz., the *stifle* and *lower thigh*—should be long, strong, and fully developed. By this formation the stifle-joint is brought well forward, and there is a considerable angle between these two divisions. The *hock* should be bony and strong, free from gum or spavin, and the point long, and so set on as to be free from weakness at the situation of curb. In examining the hind-quarter to judge of its muscular development, the horse should not be looked at sideways, but his tail should be raised, and it should be ascertained that the muscles of the two limbs meet together below the *anus*, which should be in fact well supported by them, and not left loose, and, as it were, in a deep and flaccid hollow. The outline of the outer part of the thigh should be full, and in ordinary horses the muscle should swell out beyond the level of the point of the hip. This fullness, however, is not often seen to this extent in the thoroughbred horse until he has arrived at mature age, and is taken out of training. The bones below the hock should be flat and free from adhesions; the ligaments and tendons fully developed, and standing out free from the bone; and the joints well formed and wide, yet without any diseased enlargement; the pasterns should be moderately long and oblique; the bones of good size; and lastly, the feet should correspond with those already alluded to in the anterior extremity.

The *totality* of these points should be in proportion to one another—that is to say, the formation of the horse should be “true.” He should not have long, well-developed hind-quarters, with an upright, weak, or confined fore-quarter. Nor will the converse serve; for, however well formed the shoulder may be, the horse will not go well unless he has a similar formation in the propellers. It is of great importance, therefore, that the race horse should have all his various points in true relative development, and that there shall not be the hind-quarter of a long racing-like horse with the thick, confined shoulder which would suit a stride less reaching in its nature.

THE COLOR, SKIN, HAIR, ETC.

The *color* of the thoroughbred horse is now generally bay, brown, or chestnut, one or other of which will occur in ninety-nine cases out of a hundred. Gray is not common, but sometimes appears. Black also occasionally makes its appearance, but not more frequently than gray. Roans, duns, sorrels, etc., are now quite exploded, and the above five colors may be said to complete the list of colors seen on the race-course. Sometimes these colors are mixed with a good deal of white, in the shape of blazes on the face, or white legs and feet; or even both may occur, and the horse may have little more than his body of a brown, bay, or chestnut. Most people, however, prefer the self color, with as little white as possible; and nothing but the great success of a horse's stock would induce breeders to resort to him if they were largely endowed with white. Gray hairs mixed in the coat, as in the Venisons, are rather approved of than otherwise; but they do not amount to a roan, in which the gray hairs equal, or even more than that, the other color mixed with them.

The *texture* of the coat and skin is a great proof of high

breeding, and in the absence of the pedigree would be highly regarded; but when that is satisfactory it is of no use descending to the examination of an inferior proof; and therefore, except as a *sign of health*, the skin is seldom considered. In all thorough-bred horses, however, it is thinner, and the hair more silky than in common breeds; and the veins are more apparent under the skin, partly from its thinness, but also from their extra size and number of branches. This network of veins is of importance in allowing the circulation to be carried on during high exertions, when, if the blood could not accumulate in them, it would often choke the deep vessels of the heart and lungs; but, by collecting on the surface, great relief is afforded, and the horse is able to maintain such a high and long-continued speed as would be impracticable without their help. Hence, these points are not useful as a mere mark of breed, but as essential to the very purpose for which that breed was established.

The *mane* and *tail* should be silky and not curly, though a slight wave is often seen. A decided curl is almost universally a mark of degradation, and shows a stain in the pedigree as clearly as any sign can do. Here, however, as in other cases, the clear tracing of that all-powerful proof of breeding will upset all reasoning founded upon inferior data. The setting on of the tail is often regarded as of great importance, but it is chiefly with reference to appearances; for the horse is not dependent for action or power upon this appendage.

The various breeds of **Wagon** horses are exceeding numerous. Most of the larger and heavier breeds of these animals are crossed with the Flemish horses, and are thereby rendered heavier and more capable of moving heavy weights, which their bulk and readiness to try a "dead pull" render them well adapted for.

Carriage horses are either ponies, gig horses, Brougham horses, or coach horses; being gradually larger and heavier from one end to the other of the line, which begins at the size of a small pony and extends up to the carriage horse of 17 hands. Ponies are of various breeds, some of which are of wonderful powers of endurance, with good symmetry and action, and with never-failing legs and feet. In general soundness they far excel the larger varieties of the horse, for which there is no accounting, as they are much more neglected and frequently very ill-used. A broken-winded pony, or a roarer, is a very uncommon sight, and even a lame one is by no means an every-day occurrence. Some are good trotters and yet bad gallopers, and they are consequently as well fitted for harness work as they are unfitted for hunting.

The **Shetland Pony** is the least of the species, and often under 11 hands. These ponies are very quick and active, and will walk, canter, and gallop, with good action, but seldom trot well.

THE STABLE-YARD AND ITS OCCUPANTS.

Stable.—Every one will prefer to have the stables near his house, if not on his own premises; in either case, if they are already built, he must do the best he can with them. Old buildings are for the most part very defective, badly drained, and badly ventilated. This must at once be remedied, and may generally be done at a moderate expense, which will be

amply repaid by the improved health and comfort of the horses. New stables are better, but they also frequently require alteration.

Aspect.—When about to build a stable, the first consideration will naturally be the selection of a site. We need not insist on the advantages of a southerly aspect: they are almost self-evident. The stables will be much more cheerful, and much warmer, and enable the groom to avail himself of every gleam of sunshine to open the windows and thoroughly ventilate the interior.

Unfortunately it is not always possible, from the disposition of the ground and premises, to manage this. However, let it be borne in mind that such is the best, the west the next best, and the north-east the very worst.

It should not be forgotten, also, that a thorough drainage is one of the most important points, and every natural slope of the land should be taken advantage of in this respect.

Drainage.—Having settled the site and the plans of the stables, to which we will refer further on, the first works to be provided for will be the drainage, for these will have to be carried out simultaneously with the foundations. The drains will be of two sorts, which should be kept as far away from one another as it is possible to manage: first, those connected with the drainage of the interior of the stables; second, those intended to carry away the surface-water and collect the rain-water from the roofs, etc.

Sewers.—There are four conditions which are to be regarded as indispensable in the construction of all drains from all buildings whatsoever. These conditions are: Firstly, that the entire length of drain is to be constructed and maintained with *sufficient declivity* toward the discharge into the cesspool, to enable the average proportion and quantity of liquid and solid matters committed to it to maintain a *constant and uninterrupted motion*, so that stagnation shall never occur. Secondly, that the entire length of the drain is to be constructed and maintained in a condition of *complete impermeability*, so that no portion of the matters put into it shall accidentally escape from it. Thirdly, that the head of the drain shall be so efficiently trapped that no gaseous or volatile properties or products can possibly arise from its contents. And, fourthly, that the low extremity of the drain or point of communication with the cesspool shall be so completely and durably formed, that no interruption to the flow of the drainage or escape shall there take place, and that no facility shall be offered for the upward progress of the sewage in case of the cesspool becoming surcharged.

For most purposes a fall of 2½ inches in ten feet will be sufficient, and the drain should be of 3-inch glazed stoneware pipes (4 inches for w.c.), with carefully-made socket-joints laid in the direction of the current, and cemented. For the head of the drain we would recommend the bell-trapped horse pots, which are to be had at all stable-furnishing ironmongers, taking care that they are sufficiently large and of good strong quality.

The cesspool for sewage should be well away from the tank provided for the reception of the rain-water, and well puddled with clay on the outside and cemented inside. Precaution should also be further taken that all sewage drains should be

laid below the rain-water drains, so that, in case of any accidental defects, no matter will, by any possibility, taint the water supply.

Rain-water Drains.—These will subdivide themselves into two: those laid to collect the drainage of yard, etc., and which may be common pipes laid dry, and leading to an ordinary cesspool made of bricks laid without mortar, where the water will collect and gradually lose itself; the others connected with the down pipes from roofs, and leading to a rain-water tank. These should be laid with the same care as the sewer drains: the tank constructed in the same way, with an overflow pipe to lead to cesspool just mentioned.

Plans.—The plan of the building will vary very much according to the aspect, disposition of land and other premises, and other local circumstances. These should be very carefully studied, and the plans well matured, as the success of the building will greatly depend on the disposition of its various parts. We will lay down as one of the first principles, that no stall should be less than 6 feet wide by 10 feet long, no loose box less than 10 feet square, and no stable less than 10 feet high from floor to ceiling. Passage in rear of stalls 5 feet wide.

The doors should be wide and high, and hung in two heights, with fanlight over (4 feet by 7 feet at least), that the horses may go in and out freely without a chance of knocking themselves about.

The light should be full, as tending greatly to the cheerfulness of the interior. The sashes, also, should be hung on centers in their height, as the most advantageous method for ventilation.

Ventilation.—To complete the ventilation, the only further requirements will be an opening in the ceiling—not immediately over the horses, but in the rear over the passage—fitted with an ornamental ventilating grating, to be shut and opened at will, leading to an air-flue laid between the joists, and conducting the foul air from the stables to the outside through an ornamental perforated air brick or iron grating. A similar ventilating grating, to regulate the admission of fresh air, will only be necessary where the doors and windows are small, and fit very accurately.

Paving.—The materials for paving should be of the hardest quality, on good sound ballast or concrete foundation. Any absorbent materials must be rejected. The paving of boxes and stalls should be laid with a regular gentle slope to the drain, which should always be in the center. Irrespective of other advantages, the horses stand on the level, and take their rest more comfortably.

Partitions.—The partition for stalls will be match-lined both sides, and about 4 feet 2 inches in rear, with a ramp, and rising to 6 feet 2 inches toward the mangers; with iron pillar at the end next passage, with rings for pillar reins. Sometimes, also, the match-lining will be carried through in a level line, and by a cast iron the ramp form ornamental panel.

For loose boxes the boarding will be from 5 feet to about 5 feet 4 inches high at most, with a 2-foot ornamental iron paneling over.

Mangers.—The best mangers are those containing hay-rack, corn-manger, and water-trough in one, and we more

specially recommend that preference should be given to galvanized iron.

The wall over the manger should be match-boarded to the height of partitions, and lined with iron hoop bands, sheet zinc over the joints of match-lining, or enameled tiles, to prevent horses biting at it when being cleaned.

The manger will have two rings for halter reins, and a ring and galvanized chain fitted in wall over same.

Harness-Room.—This should be at least 10 feet square, and have in it a fireplace fitted with range with boiler attached. A handy supply of hot water will be found most advantageous in the management of the stables, and we need not point out the necessity of a fire for drying the rugs, horse-cloths, saddles, harness, etc., in winter-time.

This room should be fitted with convenient hooks and brackets for the hanging and cleaning of harness. These are of all sorts of designs, in which individual taste will be the best guide.

Hay-Loft and Corn-Chamber.—In most stables, in addition to the coachman's rooms, there are a corn chamber and hay-loft over the table. The former is generally boarded off, lined all round with sheets of zinc or tin to keep out the vermin, and the door is provided with a lock, of which the coachman keeps the key, and gives out at stated times the corn for so many horses for so many days. By this means he keeps a check upon the consumption, and prevents waste and pilfering; both of which are more likely to occur when the supply is unlimited and easy of access. When there is not a regular corn-chamber, one must either be made or a large bin provided, and the oats bought from the corn-chandler as required, in quantities of two or three quarters at a time, as many as the bin will contain, which will be found a more expensive proceeding. Hay, from being bulky, is almost invariably stowed away in the loft, which should hold at least half a load; it must be stored away carefully, and nothing allowed to run about or play on it. Hay will keep good and sweet for some time, if in a dry place and not meddled with. If the loft be large enough, it will be found better and cheaper to buy a load at a time; if not, or the loft be damp, a smaller quantity must suffice.

Stable Utensils.—Under this head is included all that is used in dressing the horse, and in cleansing the yard and stable.

The pitchfork is used to shake up the straw of which the horse's bed is made; to remove all that becomes soiled and dirty; and, in general, to set it fair and straight. The handle should be kept clean, and the prongs bright.

The shovel removes the smaller particles, and the scrapings of the stable-yard.

The besom, or broom, is used to sweep out the stable after the damp soiled litter has been removed, and to keep the yard neat and clean. Those made of birch are the best.

A manure basket to take up the droppings. This should be done before trodden about, to keep the straw clean, and the stable sweet.

The stable pail should be made of strong oak, bound with iron, and neatly painted.

A sieve, to cleanse the oats and chaff of all dust and small stones.

A *quartern* and a *half-quartern measure*, to measure out the oats, beans, chaff, etc., for each horse's feed.

The currycomb.—Horses of the present day are so much better bred than formerly, consequently their coats and skin are so much finer, there is now much less use for the currycomb, except to remove the dust from the body-brush. On very rough-coated horses it may occasionally be used, but no other should ever be touched with it. In summer it is absolutely unnecessary, and in these days of clipping and singeing, in the winter it is almost equally so. It must always be used lightly, or it will severely punish the horse, and on no account should the teeth be sharp, or more than $\frac{1}{8}$ inch in length.

The body-brush, or horse-brush as it is sometimes called, is, in the hands of a good groom, the most useful implement used in dressing the horse, as it thoroughly removes all dust and dirt, stimulates the skin, and imparts a gloss to the coat.

The water-brush is to wash all dirt and mud from the feet and legs of the horse, and stains from his quarters, etc.

The mane-comb, as the name implies, is to comb the mane and tail. It should be made of horn, have large teeth, and be used carefully and only occasionally, as in a general way a good brushing will answer the purpose without pulling out the hair.

The picker is a blunt iron hook for removing the grit and stones from the horse's feet. Some are made to fold up for the pocket. A good careful groom will always carry one of these.

A *sponge*, too, is always necessary to dry the legs, etc., after washing, and for other purposes of cleanliness.

Leathers and *rubbers* are also indispensable for drying the horse after work, and wiping him over after dressing.

An *oil-brush*, and *tin* to hold the oil, to rub round the hoofs before leaving the stable to go to work.

A *wooden box* for holding the stopping.

A *singeing-lamp* and a *pair of trimming-scissors* are also necessary.

To avoid loss and confusion, there should be a place for everything, and everything in its place, and all the utensils should be kept bright and clean.

Clothing, etc.—Every horse standing in a stable must have a head-collar, with two reins long enough to go through the two rings fastened to the manger, and to reach the ground after being each attached to a weight or block made of hard wood or iron, heavy enough to keep the reins from twisting or curling up, but not so heavy as to be a weight or strain upon the horse's head as he moves it. When in a box, too, a head-collar is always handy on the quietest horse; on a tricky or unruly animal it is absolutely necessary, as he can then be at any time easily secured without risk or trouble.

Halters.—Two good web-headed hempen halters are also requisite in every stable, to lead the horse about without having to use the head-collar.

Clothing.—There is a great variety of clothing, from the comparatively inexpensive to the most expensive in make and finish. These consist of blankets or rugs of different degrees of warmth and thickness according to the time of year, a roller, a suit of body-clothing, and a set of flannel bandages. The best material will be the cheapest in the end, as wearing so much longer than the cheaper kinds.

The blanket or rug should be cut back at the top of the shoulder, with a projecting piece on each side coming round and meeting in the center of the chest, where they fasten with a buckle and strap. Each rug, too, should be bound with some strong material to prevent the edges tearing out. Two rugs will be found necessary for each horse.

A suit of *body-clothing* may be made of various materials, but strong warm serge is best for winter, and a lighter kind for summer wear. It consists of a quarter-piece, hood and breast-piece, with roller to match. The roller must be well padded, to prevent bruising or injury to the back from pressure.

In winter, in a warm stable, a heavy rug and the body-clothing will be found sufficient during the day, but at night the latter should be removed to keep it clean, and another rug substituted.

The flannel bandages are put on after the horse has had his legs washed, to keep them dry and warm. They are also of great service in illness, to keep up the circulation and warmth in the extremities. In hunting-stables, where the horses must be occasionally sweated, it will be necessary to have two or three spare rugs and hoods in use for that purpose, and which should be carefully washed and dried. The price of clothing varies so much according to the quality and finish, it is difficult to name any, but a respectable saddler will at any time give an estimate for the kind required.

HOW TO PURCHASE A HORSE.

In his choice of a horse the purchaser will of course be guided by whether he wants one for riding or driving purposes: if for the former, he will be particular that the shoulder lies well back, and if strong, not loaded at the top or points—that he has a good back, deep body, clean, flat, wiry-looking legs, and free from large splints, curbs, spavins, etc.; that his feet are firm and of moderate size—neither large and flat, and therefore necessarily weak, nor strong and narrow like those of a mule. When a horse has natural feet of the latter description they are generally remarkably sound, and will stand a great deal of work; but, as a rule, that shape is produced by internal disease, rendering the horse unsound when put to work.

If for driving purposes, he need not be so particular about the shoulders; for harness, they may be stronger, heavier, and more upright, as many make capital harness horses that are, from their formation, very uncomfortable to ride.

Having met with one suitable for his purpose, the purchaser must not let a few dollars prevent him buying him, if rather more than the price to which he had proposed to go.

THE HACK, OR RIDING HORSE.

In selecting a riding horse much must depend upon the size and weight of the rider. The best and most useful size is from 15 hands to 15 hands 2 inches. The most fashionable colors are bay, brown, and dark chestnut. A really good riding horse, with good action and fine manners, is very difficult to find, as he must be good-looking, well made, sound, and temperate, with breeding substance, action and courage. His head should be lean, the eye bold and prominent, the muzzle small, with large nostrils. The neck should be good, and

slightly arched to bend to the bridle, shoulders lie well back and strong, but not heavy and loaded at the points, the body deep and round, strong back and loin, with good deep quarters and good firm legs and feet. He must ride lightly in hand, walk pleasantly and safely, trot freely, with good action, and canter easily, yielding to the bit without pulling. He must carry the saddle well back behind the shoulders; nothing is so uncomfortable or looks so badly in any description of riding horse as sitting on the top of the shoulders instead of behind them. The price will vary according to his action, manners, and appearance, as well as the weight he can carry. Many horses of this class are very fast and can trot up to twelve and fourteen miles an hour; but if they do seven or eight miles pleasantly and well, they will be fast enough, as few men care to ride faster.

The great defects to be avoided in purchasing a riding horse are: a loose weak neck—horses so formed invariably getting their heads up, and being very uncomfortable to ride; low upright shoulders; and twisted fore-legs—rendering the horse liable to hit either the inside of the knee or fetlock joint, which is very dangerous and likely to cause him to fall. A shy, nervous horse, too, should be avoided, as well as a hot, irritable one. Horses of a light chestnut color are very often so, and in company will not settle into any pace. Ten miles is a fair average day's work.

THE LADIES' HORSE.

A perfect ladies' horse is of all descriptions the most difficult to find. So many good qualities, which, though desirable in all riding horses, may be overlooked in those for men, are here absolutely essential. Fine temper and courage, a light level mouth, and fine manners, are indispensable. He should be from 15 hands to 15 hands 3 inches high, with a good head and neck, fine, oblique shoulders, rather long in the body, with a good back and loin, deep strong quarters, firm sound legs and feet. If the hind legs are rather bent, so much the better; he will get them more under him, and consequently his paces will be easier—horses with straight hind legs invariably pitching most unpleasantly in the canter, which must be easy and elegant. As few ladies ride more than from 10 to 11 stone, including a 19 or 20 lb. saddle, and ease and lightness in action are indispensable, the ladies' horse should be very nearly thoroughbred, if not quite so. He must walk well and freely, step lightly but sharply in the trot, with a rather long easy canter. He must be high-couraged and free, but at the same time docile and temperate. A slow, lazy horse is as objectionable and disagreeable to ride as a hot, irritable one. The latter will sometimes go quietly and temperately in the hands of a lady, though irritable and fidgety when ridden by men, owing to the easier, lighter pull on their mouths. From the position of the ladies' seat and from the great length and incumbrance of the habit, it follows they cannot have the same power and control over the horse that men have, and accidents to them are more likely to be attended with dangerous results; hence, greater care is necessary in selecting a horse for their use free from all tricks, nervousness, and vice.

Many are called good ladies' horses that have no other rec-

ommendation than their being very quiet, which with very many will cover a multitude of faults.

A few years since ladies rode no pace but the walk and canter, but lately the trot has become a favorite and fashionable pace; consequently a safe, sharp, easy trot is now essential in all horses to carry a lady.

The ladies' hunter differs in some respects from the riding horse for the road or park; he may be less showy and stronger. He must be eight or nine years old, have been well and regularly ridden to hounds for at least two or three seasons, and thoroughly understand his business; not less than 15 hands 2 inches or more than 16 hands high, well above the weight he has to carry, well bred, and fast, but thoroughly quiet and temperate among other horses and at his fences, which he should take freely and cleverly, go well in the bridle without pulling, and turn readily with a motion of the hand.

A hot, irritable, fretful brute, or one with a weak, loose neck, is uncomfortable enough for a man to ride, but it is absolutely dangerous to allow any lady to ride such a one on the road—to say nothing of riding him to hounds—however good he may be represented to be.

The best colors for ladies' horses are bay, brown, dark chestnut, or black. There is an old saying, that "a good horse cannot be a bad color;" and though no purchaser should decline to buy one that is likely to suit him on account of color, those I have named are to be preferred.

The price of horses differs so greatly, and depends so much on their make, style, and qualifications, that it is difficult to name an average one.

THE HUNTER.

In selecting a hunter it is necessary to bear in mind the country in which he is to be ridden.

The points essential to a hunter are a lean head and neck, well set on to good oblique shoulders, a strong back and loin, wide hips, a deep body and back ribs, good muscular quarters, and gaskins well let down to the hocks, and clean, firm legs and feet. He must be temperate, with plenty of courage, and have a good mouth and manners. His size will vary from 15 hands 1 inch to 16 hands 2 inches, according to the weight he has to carry and the description of country he has to cross. From 15 hands 3 inches to 16 hands 2 inches is perhaps the best size for the flying grass countries, while from 15 hands 1 inch to 15 hands 3 inches will be found better and handier for the close deep country.

THE CARRIAGE HORSE.

These horses are bought by the principal dealers and job-masters at three and four years old, and are broken, driven, and matched by them for some time before they are fit for the carriage. They must be fully 16 hands high, with rather long rainbow neck, strong but oblique shoulders, deep round body, with long muscular quarters, carrying a good tail, clean flat legs, and good firm feet. Being kept more for show than work, grand stylish appearance and action are indispensable; and from being generally loaded with flesh, unless the feet and legs are good, they will soon wear out.

The great defects to which carriage horses are liable, from their size and general formation, are—defect of the wind, either

roaring or whistling; horses with long rainbow necks very frequently becoming so after a bad cold or an attack of influenza. All large horses, too, are more or less liable to their wind becoming affected after illness. Inflammation of the feet is another common complaint with horses of this class. Loaded with flesh to improve their style and appearance, and with high action in addition to their weight—two great causes of inflammatory attacks—they are very liable to this complaint, unless great care is taken to guard against it. Many carriage horses, too, have flat feet, rendering them doubly liable to an attack of this description; in them the sole of the foot will sink, becoming convex instead of concave. When such is the case, great care is requisite in shoeing, or the horse will not be workably sound.

HORSES FOR LIGHT HARNESS.

In this class may be included horses suitable for buggies, T-carts, light broughams, dog-carts, etc. They should be well-bred, neck rather long and arched, with good back and quarters, strong oblique shoulders, carry a good head and tail, and be of a generally showy and stylish appearance, with high grand action. Horses of this description are more fitted for the park and for show than for real work.

COBS.

The cob is a strong little horse, about 14 hands high, and of various descriptions. When well bred and good-looking, with action, they are not only very useful, but very valuable for carrying heavy and elderly men, as, being low, they are easy to get on and off. A good cob must have a good head, a strong but not heavy neck, good oblique and very strong shoulders, not loaded at the top or points, a deep round body, good loin and strong muscular quarters and thighs—short, flat, firm legs, and good round feet; he should walk freely and well; step sharp and high in the trot, and canter safely and freely; if, in addition to these qualifications, he is quiet and does not shy or stumble, he is invaluable.

The faults to be avoided in purchasing a cob are upright shoulders, want of courage, and want of action. Particular attention must be paid to the shoulders—that they are well formed and oblique, many horses of this class having low, upright shoulders, which renders them valueless as riding cobs, and useful only for harness purposes—nothing being so uncomfortable and looking so ugly as riding on the top of the shoulders instead of well behind them, which must necessarily be the case with straight, low shoulders.

DEFECTS, DISEASES, AND FAULTS TO BE AVOIDED IN ALL HORSES.

A loose, weak neck.—Horses so formed are extremely unpleasant to ride; they get their heads up, cannot see where they are going, and it is impossible to feel their mouths.

Twisted fore-legs.—Horses with this defect, when put to work, hit the inside of the fetlock joint, and very often under the knee as well. Both are highly dangerous, as the parts soon become swelled and sore from repeated blows, rendering the horse liable to fall.

Capped hocks are very unsightly, but seldom cause lameness.

Diseased eyes, from any cause, are sure to terminate in blindness.

Stringhalt.—Catching up one or both the hind legs. When considerable, it renders the horse very unpleasant either to ride or drive.

All bony enlargements of the joints, viz., spavin, ringbone, sidebones, etc., as causing lameness, very difficult and doubtful of cure.

Laminitis, or inflammation of the laminae, generally resulting in pumiced or convex soles of the feet.

Corns, unless small, as, if not properly treated, they are very troublesome, often causing temporary lameness, and rendering the horse cramped in his action, and liable to fall.

Chronic cough.—Frequently terminates in broken wind.

Megrims.—An attack of giddiness, more or less violent, that frequently attacks some horses, rendering them for the time highly dangerous. Since condition has been better understood, and horses are fed more on manger food and do not have so much hay, megrims are not so common as formerly. Fast, free horses are more liable to it than others. The cause is supposed to be determination of blood to the head.

Navicular disease.—Lameness in the navicular joint, and incurable.

An unnerved horse, as showing the horse's feet are diseased. Many unnerved horses will with care do a great deal of work either on the road or in the field. It is a merciful operation by which many horses can work and move about with ease and comfort, that must otherwise have been destroyed, or lived in pain and misery to the end of their days.

Roaring.—A disease of the respiratory organs, causing the horse to make a noise when put to any exertion.

All enlargements of sinews and tendons, arising from breaking down or violent strains, unless the horse has been properly fired for them, and is intended only for light, easy work, when he may stand.

All horses that show any sort of vice, as rearing, kicking, running away, being restive, and shying badly, or are vicious in the stable. Such animals are highly dangerous to all, but particularly so to the inexperienced.

THE GROOM.

There are several descriptions and classes of grooms employed in private stables. With the stud groom, for the breaking and training of thorough-bred horses, we have here nothing to do. The most important is the groom for the training and management of hunters. For this purpose he must be steady, respectable, and intelligent, and have had considerable experience; for, as the hunter, to carry a man well and safely to hounds, must be very fit, it follows that the groom must understand not only how to prepare him, but when he is fit.

STABLE MANAGEMENT OF THE HORSE.

In the morning the first thing the groom does on entering the stable, which must not be later than six o'clock, if the weather be warm and fine, will be to open the door and admit some fresh air; he will then give each horse a little water and a piece of hay; having eaten which, he will put on the hood

and the watering-bridle, and take him out for exercise. While out, the helpers will separate the dry clean straw from the damp and soiled, removing the latter to the manure-heap. Thoroughly sweep and cleanse the floor of each stall and box, allowing the straw to remain turned up until the return of the horses, when it may be partly littered down again. Each horse will then have a feed of corn, and having eaten it, be well dressed, and his stall or box set fair. When one groom only is kept, or where the horses do a fair amount of work during the day, early exercise is impossible and unnecessary.

In dressing the horse the first thing the groom does is to turn him round in his stall, fold the rug back from his neck and shoulders, then well and carefully brush his head, neck, and shoulders with the body-brush, cleaning it with the currycomb as often as required. He is then turned back in the stall, the clothing removed, and his body, hind-quarters, and legs undergo the same careful and thorough brushing, care being taken to keep the brush clean with frequent use of the currycomb. He is next wiped all over with a damp wisp made of hay-bands, which entirely removes any remaining dust, and after being well wiped over with a linen rubber or wash-leather, his clothes are put on and secured by the roller. His eyes, nose, and *anus* are next sponged clean, his mane and tail carefully combed or brushed, first with a dry and then with a damp brush; the feet are carefully picked out and washed, the legs well brushed, and if dirty or stained, well washed, and either rubbed dry or dried in flannel bandages. The stall is then set fair, and the horse is ready for use.

With gray or light-colored horses, or that have white legs, the better plan will be to wash all stains off the quarters, etc., and to wash the legs with warm water and soap, rubbing the first dry and well bandaging the latter before proceeding to dress the horse, as by the time that operation is over the legs will be dry and the horse warm and comfortable.

In the spring and autumn, when the horse is shedding his coat and the hair is broken and thin, the body-brush must be laid aside, the wisp and rubber being then quite sufficient for the necessary dressing.

Before having the harness put on to go out, the horse must again be wiped over, his mane and tail brushed, and his hoofs rubbed round with the oil-brush. Some people object to the use of the oil-brush to the feet, and only have them done round with a wet brush.

On returning to the stable after work, if he be clean and dry, his feet should be well picked out and washed, and he should again be well dressed and set fair. But if he returns hot and tired and wet and dirty, the best and quickest plan is to wash him all over with tepid water, scraping him immediately as dry as possible, clothing him up, and bandaging his legs above his knees and hocks with flannel bandages. If the weather be warm, he may be washed in the open air, and a light suit of clothes put on, to be replaced by fresh as soon as he is dry; but in winter, and if it be cold, he must be washed in the stable, and a suit of warm clothing put on until he is dry, when it must be changed. By this means the horse will be got fresh and comfortable in a much shorter time and with less fatigue to himself than if the dirt and sweat were removed in any other way and he was rubbed dry.

At seven o'clock, the horses that have not been out or done but little work may again have their clothing removed and be wiped over, which must not be done when the horse is tired with work and has been once made fresh. They may then be fed, their heads let down, their feet stopped, and be shut up for the night.

FEEDING.

Horses should have the corn four times a day—at about seven, eleven, three, and seven; and the hay twice—at night and in the morning. These times may be slightly varied to suit the convenience. The quantity of each must depend, as we have said, upon the size and description of the horse, and the amount of work required of him. A full-sized carriage horse will require at least five quarters of corn, and about twelve or fourteen pounds of hay, daily. These horses, being kept for show and style rather than for work, are required to be full of flesh to give them a grander and more imposing appearance.

Soiling is a term used for the feeding of horses on green food indoors.

Turning out to grass is useful when the health is injured by long-continued hard work and dry food, or when the legs are sore, or the feet inflamed.

EXERCISE AND WORK.

Unless the weather is wet and bad, every horse, whether in a stall or box, is better for going out every day.

The work of a carriage horse does not on an average exceed seven or eight miles. They are very often out for three or four hours in the day, but by far the greater part of the time they are standing about, while the occupants of the carriage are either shopping or making calls, etc. From their size and weight they are generally unfit for long journeys and hard work.

The work of a hunter is to carry a man to hounds, and in order to render him fit to do so safely and well, he will require a great deal of exercise.

Before the commencement of the hunting-season he will require three hours' steady walking and trotting exercise, with occasional sweats and strong gallops; but afterwards, supposing he is ridden to hounds three days a fortnight, he will require but little fast exercise—from two to three hours a day good steady walking will keep most horses quite fit.

The fair average day's work for a hack or harness horse is nine or ten miles, in which case exercise is quite unnecessary. More harm and injury are done to horses by the grooms when at exercise than in any other way; and unless the man can be fully depended upon, the less they are exercised the better. Where the horse is only occasionally worked, exercise is of course absolutely necessary, not only to preserve him in health but to keep him steady and from getting above himself.

CLIPPING OR SINGEING.

The best time to clip or singe a horse must depend principally upon the state of his coat. Some shed their coat so much earlier than others, while in some horses it is much thicker and coarser. About the end of September is the best time for singeing, and three weeks or a month later for clipping.

Clipping requires much practice and very neatly doing to look well; it is far more difficult than singeing, and consequently is not so frequently used. The effect of both is the same—to shorten the long rough winter coat to the length of the short summer one, thereby preventing that extreme sweating which is always consequent on a long winter coat. It is performed with scissors and a comb. The former are generally curved, and of various sizes, to suit the different parts of the body of the horse for which they are used.

Singeing is performed with a lamp made for the purpose, burning naphtha or some spirit of the same description, and which is passed lightly over the whole body till the hair is reduced to the required length. It may be commenced as soon as the winter coat is partly grown, and must be repeated about every ten days or a fortnight till the coat is set and done growing, by which means the coat will not only be kept short, but the hair will better retain the natural color. After Christmas, about once in three weeks will generally be found sufficient to keep down the long rough hairs.

MANAGEMENT OF THE FEET.

This department of stable management is often sadly neglected by the groom, who is particular enough in every other respect; but if his master is only a judge of skin and condition, he is too apt to leave the feet to take care of themselves.

An examination of the shoes should be carefully made every morning when the horse comes in from exercise; and if they are at all loose, or the clenches are too high, or the shoes are worn out, they should be renewed or removed at once.

Every night the feet should be well brushed out, and the picker run round the shoe. If the horn is hard and dry, they should be stopped with cow-dung and tar, in the proportion of 3 to 1, called "stopping," which ought always to be kept by the groom in a box for the purpose, called the "stopping-box;" but it is seldom necessary to do this more than once or twice a week; indeed, in most feet it will soften the horn too much if used more frequently.

STABLE VICIES.

Stable vices may be considered to include the following long list of offenses against the code of laws made for the stabled horse, and enforced by the stablemen. They are: 1, getting loose from the head-stall; 2, Hanging back; 3, Leaping into the manger; 4, Turning round in the stall; 5, Lying under the manger; 6, Halter-casting; 7, Casting in the stall; 8, Kicking the stall-post; 9, Weaving; 10, Pawing; 11, Eating the litter; 12, Kicking at man; 13, Biting; 14, Crib-biting; 15, Wind-sucking.

Hanging back in the collar is an attempt to get free by bursting the throat-lash or collar-rein, and in some cases great force is applied in this way—so much so that many horses have broken their hips from the sudden giving-way of the halter, letting them back so that they fall over and injure themselves irremediably. The only cure is a strong chain and a head-stall that no force will break, after trying to burst which a few times, the horse will almost always desist. If the manger is not very firmly placed, another ring should be fixed in the wall by pierc-

ing it and screwing a nut on at the back. The groom should likewise watch for the attempt, and well flog the horse from behind immediately he sees him beginning.

TRICKS AND VICIES TO WHICH HORSES ARE LIABLE OUT OF THE STABLE.

Kicking is another dangerous, vicious habit. Like rearing, it may be cured by those who thoroughly understand horses; but even when perfectly quiet and manageable in their hands, such horses are never to be trusted with less experienced persons.

Running away is another very dangerous fault. It may arise from vice or from the horse having been at some time very seriously alarmed. In the former case, a very sharp bit and great care may prevent it; but in the latter, when the horse again becomes alarmed, nothing will stop him, as he is for the time in a state of madness.

Bucking or Plunging is another dangerous habit. Sometimes it arises from vice and sometimes only from freshness, the horse being above himself from want of work; in the latter case it is soon cured by putting him to daily steady work.

Jibbing, either in saddle or harness, is a very dangerous vice, and is always the result of bad temper. In saddle the horse rears, kicks, and rubs the rider against anything in his way. He will go anywhere and rush anywhere but in the direction in which he is wanted to go. A good thrashing will sometimes cure him, but it is not always easy to do it, as the horse invariably jibs in the most awkward and dangerous places in which to fight him. In harness the jibber will not start, he runs back, and if whipped or punished, will plunge and throw himself down. Such animals are quite unfitted for private use.

Shying.—This bad habit may arise from timidity, defective eyesight, or bad temper. If from timidity, it can only be overcome by gentle usage and allowing the horse to pass the object without taking any notice of his fear beyond patting and encouraging him; to chastise him is worse than useless and senseless. If it arise from defective vision, it will be incurable, as it will be impossible for the animal to see objects otherwise than through a distorted medium. If it arise from vice, which is frequently the case, the horse must be made firmly but temperately to pass the object at which he shies; having passed it, continue the ride; do not return and pass it again and again, as that only irritates him; and when he finds he is mastered, he will daily improve.

HARNESS FOR SADDLE HORSES.

This consists of saddles, bridles, breast-plates, and martingales.

Saddles may be had of almost any size and weight. They may be made with either plain or padded flaps, according to the seat and fancy of the rider. Some prefer the former, and others the latter. For the generality of riders there cannot be a doubt that the padded flaps are by far the better, as they keep the knee more steadily in the proper place, prevent the leg flying backwards and forwards, if the horse jumps or plunges; while in hunting they are of very material assistance in taking

a drop jump, and also in steadying and recovering a horse when blundering or falling at a fence. The plain flaps have perhaps a smarter appearance, and a clever horseman may be able to ride as well on them as on the padded flaps, but that is almost all that can be said for them.

The saddle should be of sufficient length and breadth that the weight of the rider may be pretty equally distributed over it, or the back of the horse will suffer, and saddle-galls be the result.

The stirrups should not be small, for in the event of a fall, the foot is more likely to hang in them. All well-made saddles have spring bars, which should be occasionally oiled, that they may work easily, and release the stirrup-leather should such an accident occur. The stirrup-leather should be of the best, close and strong, not too heavy, or it will look clumsy.

Every saddle requires two girths—which may either be of the ordinary kind of the same width, with a buckle at each end, or one broad, with two buckles at each end, which is put on first, and a second, about half the width only, over it, with one buckle at each end.

After use, the lining of the saddle must be thoroughly dried in the sun or before the fire, and then well brushed, which will keep it soft and clean.

This is particularly necessary with side-saddles. It is for want of this care and attention that so many horses have sore backs. When dirty, the saddle must be sponged clean, but not made more wet than is absolutely necessary; after which a little soft soap rubbed on will preserve the leather soft and pliable, and prevent it cracking.

In choosing a saddle, go to a first-rate maker; he may be a little more expensive, but you will get a good article, that will wear three times as long as an inferior one, will fit the generality of horses, will never get out of form, and will look well to the last.

The Breast-plate or Hunting-plate is used to keep the saddle in its place when hunting. It is also of great service on horses with short back-ribs, to prevent the saddle working back, which it is very likely to do. But on the road and in the field no lady should ride without one, as it will keep the side-saddle securely in its place, and prevent it turning round should the girth get loosened, or one break.

The Martingale is used to steady the horse's head, and keep it in its proper place.

It is generally used on loose weak-necked horses, and though of service in the hands of the experienced, it is often dangerous when used by others, as being apt to catch on the bit or buckles of the bridle, and so cause serious accidents.

The Bridle.—There is a great variety of bits suitable for different descriptions and tempers of horses, but it is impossible to describe them all in so limited a space. They all belong to one of two classes—the snaffle or the curb, and are of different degrees of severity and power.

The Snaffle is a piece of steel with a joint in the middle; it may be smooth and plain, twisted, or double-jointed. The smooth snaffle is the mildest form of bit there is, and, except just for exercise, few horses ride pleasantly in one. The twisted bit is sharper, and if drawn quickly backwards and forwards through the mouth, is very punishing. The double-jointed is

the most severe; it is formed of two plain snaffles one above the other; but the joints in each not being opposite each other, cause a sharper and more narrow pressure on the tongue and lower jaw. Very few horses ride well and pleasantly in a snaffle of any kind, as they all cause a horse to raise his head and open his mouth to take the pressure off his tongue. In addition to this there are the Chain-snaffle, which is a very light bit, and the Gag, used for horses that get their heads down.

The Curb-bit is a lever that, by means of a curb-chain, acts upon the lower jaw, and may be made very easy or very severe according to the length of cheek or leverage, and the height of the port or arch in the center of the mouth-piece. It is very seldom used singly, but in conjunction with some kind of snaffle, when it forms a double-rein bridle, and is by far the most useful bit. All horses go better in it, when properly handled, than in any other; as by lengthening or shortening the curb-chain, and taking up or dropping the bit in the mouth, it can be made either less or more severe, to suit most horses.

The Pelham is a curb and snaffle in one; it is a curb-bit with a joint in the middle, instead of a port. It forms a double-rein bridle, and is very light and easy.

Like saddles, the bridles should be of first-rate material and workmanship; the bits sewn on to the head-pieces and reins, as being much neater and lighter than the buckles. The leather must be kept clean and pliable with soft soap, and the bits clean and bright with silver-sand and oil.

HARNESSING AND PUTTING-TO.

Harnessing.—In all cases the first thing to be done, after the horse is dressed, is to put on the collar, which is effected by turning the horse round in his stall, and slipping it over his head, with the large end upward. This inversion is required because the front of the head is the widest part, and is in this way adapted to the widest part of the collar, which, even with this arrangement, will in coarsely-bred horses hardly pass over the cheek-bones. Before the collar is put in its place, the hames are put on and buckled; for if this was delayed until after it had been reversed, they would have to be held on while the hame-straps were being drawn together, whereas in this way their own weight keeps them in place. They are now reversed altogether, and the pad put in its place, before buckling the belly-band, of which the crupper is slipped over the tail by doubling up all the hair, grasping it carefully in the left hand while the right adapts the crupper. A careful examination should always be made that no hairs are left under it, for if they are they irritate the skin, and often cause a fit of kicking. After the crupper is set right the pad is drawn forwards, and its belly-band buckled up pretty tightly; the bridle is now put on, and the curb-chain properly applied; the reins being slipped through the terrets and buckled on both sides, if for single harness, or on the outside only if for double, and the driving-rein folded back and tied in the pad terret.

Putting-to is managed very differently according to whether the horse is going in shafts or with a pole. If for shafts, they are tilted up and held there by one person, while the other backs the horse until he is under them, when they are dropped

down, and the tugs slipped under or over the ends of the shafts, according to the formation of the tugs, some being hooks, and others merely leather loops. Care must be taken that they do not slip beyond the pins on the shafts. The traces are now attached to the drawing-bar, the breechen or kicking-strap buckled, and the false belly-band buckled up pretty tightly, so as to keep the shafts steady. In four-wheeled carriages it should be left tolerably loose when a breechen is used, to allow of this having free play. The reins are now untwisted from the terret, and the horse is put-to. For double harness, the first thing is to bring the horse round by the side of the pole, and put the pole-piece through the sliding ring of the hames, the groom holding it, or else buckling it at the longest hole while the traces are being put-to; as soon as this is done, the pole-piece is buckled up to its proper length, each coupling-rein buckled to the opposite horse's bit, the driving-reins untwisted from the terret, and the two buckled together, and the horses are ready. The leaders of a tandem or four-in-hand are easily attached, and their reins are passed through the rings on the head of the wheelers, and through the upper half of the pad terret.

Unharnessing is exactly the reverse of the above, everything being undone exactly in the same order in which it was done. The chief errors in either are—in double harness, in not attaching the pole-piece at once in putting-to, or in unbuckling it altogether too soon, by which the horse is at liberty to get back upon the bars, and often does considerable damage by kicking.

ORDINARY DRUGS USED FOR THE HORSE, AND THEIR MODE OF ADMINISTRATION

The Action of Medicines, and the Forms in which they are generally prescribed.

ALTERATIVES.

Alteratives are intended to produce a fresh and healthy action, instead of the previously disordered function. The precise mode of action is not well understood, and it is only by the results that the utility of these medicines is recognized.

1. Stinking hellebore, 5 to 8 grs. ; powdered rhubarb, 2 to 4 grs. Mix, and form into a pill, to be given every night.
2. *In Disordered States of the Skin.*—Emetic tartar, 5 oz. ; powdered ginger, 3 oz. ; opium, 1 oz. Syrup enough to form 16 balls ; one to be given every night.
3. *Simply cooling.*—Barbadoes aloes, 1 oz. ; Castile soap, 1½ oz. ; ginger, ½ oz. Syrup enough to form 6 balls ; one to be given every morning.
4. *In strangles.*—Barbadoes aloes, 1 oz. ; emetic tartar, 2 drms. ; Castile soap, 2 drms. Mix.
5. *Alterative Ball for General Use.*—Black sulphuret of antimony, 2 to 4 drms. ; sulphur, 2 drms. ; niter, 2 drms. Linseed meal and water enough to form a ball.
6. *For Generally Defective Secretions.*—Flowers of sulphur, 6 oz. ; emetic tartar, 5 to 8 drms. ; corrosive sublimate, 10 grs. Linseed meal mixed with hot water, enough to form six balls, one of which may be given two or three times a week.
7. *In Debility of Stomach.*—Calomel, 1 scruple ; aloes, 1 dr. ; cascarilla, gentian, and ginger, of each in powder, 1 dr. ; Castile soap, 3 drms. Syrup enough to make a ball, which may be given twice a week, or every other night.

ANODYNES.

Anodyne medicines are given either to soothe the general nervous system, or to stop diarrhoea ; or sometimes to relieve spasm, as in colic or tetanus. Opium is the chief anodyne used in veterinary medicine, and it may be employed in very large doses.

1. *In Colic.*—Powdered opium, ½ to 2 drms. ; Castile soap and cam-

phor, of each 2 drms. ; ginger, 1½ dr. Make into a ball with liquorice powder and treacle, and give every hour while the pain lasts. It should be kept in a bottle or bladder.

2. *Anodyne Ball (ordinary).*—Opium, ¾ to 1 dr. ; Castile soap, 2 to 4 drms. ; ginger, 1 to 2 drms. ; powdered aniseed, ½ to 1 oz. ; oil of caraway seeds, ½ dr. Syrup enough to form a ball, to be dissolved in a half-pint of warm ale, and given as a drench.

3. *Anodyne Drench in Superburation, or ordinary Diarrhoea.*—Gum arabic, 2 oz. ; boiling water, 1 pint ; dissolve, and then add oil of peppermint, 25 drops ; tincture of opium, ½ oz. Mix, and give night and morning, if necessary.

4. *In Chronic Diarrhoea.*—Powdered chalk and gum arabic, of each 1 oz. ; tincture of opium, ½ oz. ; peppermint water, 10 oz. Mix, and give night and morning.

ANTISPASMODICS.

Antispasmodics, as their name implies, are medicines which are intended to counteract excessive muscular action, called *spasm*, or, in the limbs, *cramp*. This deranged condition depends upon a variety of causes, which are generally of an irritating nature ; and its successful treatment will often depend upon the employment of remedies calculated to remove the cause, rather than directly to relieve the effect. It therefore follows that, in many cases, the medicines most successful in removing spasm will be derived from widely separate divisions of the *materia medica*, such as aperients, anodynes, alteratives, stimulants, and tonics. It is useless to attempt to give many formulas for their exhibition ; but there are one or two medicines which exercise a peculiar control over spasm, and I shall give them without attempting to analyze their mode of operation.

1. *For Colic.*—Spirits of turpentine, 3 oz. ; tincture of opium, 1 oz. Mix with a pint of warm ale, and give as a drench.
2. Spirits of turpentine, 3½ oz. ; tincture of opium, 1½ oz. ; Barbadoes aloes, 1 oz. Powder the aloes, and dissolve in warm water ; then add the other ingredients, and give as a drench.
3. *Clyster in Colic.*—Spirits of turpentine, 6 oz. ; aloes, 2 drms. Dissolve in 3 quarts of warm water, and stir the turpentine well into it.
4. *Antispasmodic Drench.*—Gin, 4 to 6 oz. ; tincture of capsicum, 2 drms. ; tincture of opium, 3 drms. ; warm water, 1½ pint. Mix, and give as a drench, when there is no inflammation.

APERIENTS.

Aperients, or Purges, are those medicines which quicken or increase the evacuations from the bowels, varying, however, a good deal in their mode of operation. Some act merely by exciting the muscular coat of the bowels to contract ; others cause an immense watery discharge, which, as it were, washes out the bowels ; whilst a third set combine the action of the two. The various purges also act upon different parts of the canal, some stimulating the small intestines, whilst others pass through them without affecting them, and only act upon the large bowels ; and others, again, act upon the whole canal. There is a third point of difference in purges, depending upon their influencing the liver in addition, which mercurial purgatives certainly do, as well as rhubarb and some others, and which effect is partly due to their absorption into the circulation, so that they may be made to act, by injecting into the veins, as strongly as by actual swallowing, and their subsequent passage into the bowels. Purgatives are likewise classed, according to the degree of their effect, into laxatives, acting mildly, and drastic purges, acting very severely.

APERIENTS FOR THE HORSE, COMMONLY CALLED PHYSIC.

1. *Ordinary Physic Balls.*—Barbadoes aloes, 3 to 8 drms. ; hard soap,

4 drms. ; ginger, 1 drm. Dissolve in as small a quantity of boiling water as will suffice ; then slowly evaporate to the proper consistence, by which means griping is avoided.

2. *A Warmer Physic Ball.*—Barbadoes aloes, 3 to 8 drms. ; carbonate of soda, $\frac{1}{2}$ drm. ; aromatic powder, 1 drm. ; oil of caraway, 12 drops. Dissolve as above, and then add the oil.

3. *Gently Laxative Ball.*—Barbadoes aloes, 3 to 5 drms. ; rhubarb powder, 1 to 2 drms. ; ginger, 2 drms. ; oil of caraway, 15 drops. Mix, and form into a ball, as in No. 1.

4. *Stomachic Laxative Balls, for Washy Horses.*—Barbadoes aloes, 3 drms. ; rhubarb, 2 drms. ; ginger and cascarrilla powder, of each 1 drm. ; oil of caraway, 15 drops ; carbonate of soda, $\frac{1}{2}$ drm. Dissolve the aloes as in No. 1, and then add the other ingredients.

5. *Purgive Balls, with Calomel.*—Barbadoes aloes, 3 to 6 drms. ; calomel, $\frac{1}{2}$ to 1 drm. ; rhubarb, 1 to 2 drms. ; ginger, $\frac{1}{2}$ to 1 drm. Castile soap, 2 drms. Mix as in No. 1.

6. *Laxative Drench.*—Barbadoes aloes, 3 to 4 drms. ; canella alba, 1 to 2 drms. ; salt of tartar, 1 drm. ; mint water, 8 oz. Mix.

7. *Another Laxative Drench.*—Castor oil, 3 to 6 oz. ; Barbadoes aloes, 3 to 5 drms. ; carbonate of soda, 2 drms. ; mint water, 8 oz. Mix, by dissolving the aloes in the mint water, by the aid of heat, and then adding the other ingredients.

8. *A Mild Opening Drench.*—Castor oil, 4 oz. ; Epsom salts, 3 to 5 oz. ; gruel, 2 pints. Mix.

9. *A Very Mild Laxative.*—Castor oil and linseed oil, 4 oz. of each ; warm water, or gruel, 1 pint. Mix.

10. *Used in the staggers.*—Barbadoes aloes, 6 drms. ; common salt, 6 oz. ; flour of mustard, 1 oz. ; water, 2 pints. Mix.

11. *A Gently Cooling Drench in Slight Attacks of Cold.*—Epsom salts, 6 to 8 oz. ; whey, 2 pints. Mix.

12. *Purgative Clyster.*—Common salt, 4 to 8 oz. ; warm water, 8 to 16 pints.

ASTRINGENTS.

Astringents are supposed to produce contraction in all living animal tissues with which they come in contact, whether in the interior or exterior of the body, and whether immediately applied or by absorption into the circulation. But great doubt exists as to the exact mode in which they act ; and, as in many other cases, we are obliged to content ourselves with their effects, and to prescribe them empirically. They are divided into astringents administered by the mouth, and those applied locally to external ulcerated or wounded surfaces.

1. *Astringent Wash for the Eyes.*—Sulphate of zinc, 5 to 8 grs. ; water, 2 oz. Mix.

2. Goulard extract, 1 drm. ; water, 1 oz. Mix.

3. *Astringent Remedies for the Horse. For Bloody Urine.*—Powdered catechu, $\frac{1}{2}$ oz. ; alum, $\frac{1}{2}$ oz. ; cascarrilla bark in powder, 1 to 2 drms. Licorice powder and treacle, enough to form a ball, to be given twice a day.

4. *For Diabetes.*—Opium, $\frac{1}{2}$ drm. ; ginger powdered, 2 drms. ; oak bark powdered, 1 oz. ; alum, as much as the tea will dissolve ; camomile tea, 1 pint. Mix for a drench.

5. *External Astringent Powder for Ulcerated Surfaces.*—Powdered alum, 4 oz. ; Armenian bole, 1 oz.

6. White vitriol, 4 oz. ; oxide of zinc, 1 oz. Mix.

7. *Astringent Lotion.*—Goulard extract, 2 to 3 drms. ; water, $\frac{1}{2}$ pint.

8. Sulphate of copper, 1 to 2 drms. ; water, $\frac{1}{2}$ pint. Mix.

9. *Astringent Ointment for Sore Heels.*—Superacetate of lead, 1 drm. ; lard, 1 oz. Mix.

10. *Another for the same.*—Nitrate of silver powdered, $\frac{1}{2}$ drm. ; goulard extract, 1 drm. ; lard, 1 oz. Mix.

BLISTERS.

Blisters are applications which inflame the skin, and cause watery bladders to form upon it ; they consist of two kinds, one for the sake of counter-irritation, by which the original disease is lessened, in consequence of the establishment of this irritation at a short distance from it. The other, commonly

called "Sweating" in veterinary surgery, by which a discharge is obtained from the vessels of the part itself, which are in that way relieved and unloaded ; there is also a subsequent process of absorption in consequence of the peculiar stimulus applied.

BLISTERS FOR HORSES.

1. *Mild Blister Ointment* (counter-irritant).—Hog's lard, 4 oz. ; Venice turpentine, 1 oz. ; powdered cantharides, 6 drms. Mix and spread.

2. *Stronger Blister Ointment* (counter-irritant).—Spirits of turpentine, 1 oz. ; sulphuric acid, by measure, 2 drms. Mix carefully in an open place, and add hog's lard, 4 oz. ; powdered cantharides, 1 oz. Mix and spread.

3. *Very strong Blister* (counter-irritant).—Strong mercurial ointment, 4 oz. ; oil of origanum, $\frac{1}{2}$ oz. ; finely-powdered euphorbium, 3 drms. powdered cantharides, $\frac{1}{2}$ oz. Mix and spread.

4. *Rapidly Acting Blister* (counter-irritant).—Best flour of mustard, 8 oz., made into a paste with water. Add spirits of turpentine, 2 oz. ; strong liquor of ammonia, 1 oz. This is to be well rubbed into the chest, belly, or back, in cases of acute inflammation.

5. *Sweating Blister.*—Strong mercurial ointment, 2 oz. ; oil of origanum, 2 drms. ; corrosive sublimate, 2 drms. ; cantharides, powdered, 3 drms. Mix, and rub in with the hand.

6. *Strong Sweating Blister, for Splints, Ring-Bones, Spavins, etc.*—Red iodide of mercury, 1 to $\frac{1}{2}$ drm. ; lard, 1 oz. To be well rubbed in the legs after cutting the hair short, and followed by the daily use of arnica, in the shape of a wash, as follows, which is to be painted on with a brush : tincture of arnica, 1 oz. ; water, 12 to 15 oz. Mix.

7. *Tincture of Iodine*, which should be painted on with a brush daily, until it causes the cuticle to exfoliate. It may then be omitted for a few days, to be resumed after that interval.

CAUSTICS.

Caustics are substance which burn away the living tissues of the body, by the decomposition of their elements. They are of two kinds, viz.—first, the actual cautery, consisting in the application of the burning iron, and called Firing ; and, secondly, the potential cautery, by means of the powers of mineral caustics, such as potash, lunar-caustic, etc.

Firing is used extensively upon horses for inflammation of the legs. A set of firing-irons is heated to a great heat, and, one at a time, are lightly applied across the limb, or in lines up and down, according to the nature of the disease. This excites a very great amount of swelling and inflammation, by which the mischief is often abated, and is followed also by a contraction of the skin, which appears to act as a bandage in the weak state of the vessels of the legs which often occurs. The firing is generally followed by blistering, in order to keep up the inflammation, and at least three months must be consumed before the fired horse, if thoroughly operated on, will be fit for work.

Strong solid caustics are as follows :—

1. Fused Potass, difficult to manage, because it runs about in all directions, and little used in veterinary medicine.

2. Lunar-Caustic, or nitrate of silver, very valuable to the veterinary surgeon, and constantly used to apply to profuse granulations.

3. Sulphate of Copper, almost equally useful, but not so strong as lunar-caustic ; it may be well rubbed in to all high granulations, as in broken knees, and similar growths.

4. Corrosive Sublimate in powder, which acts most energetically upon warty growths, but should be used with great care and discretion. It may safely be applied to small surfaces, but not without a regular practitioner to large ones. It should be washed off after remaining on a few minutes.

5. Yellow Orpiment, not so strong as the corrosive sublimate, and may be used with more freedom. It will generally remove warty growths, by picking off their heads and rubbing it in.

Strong liquid caustics :—

6. Sulphuric acid, or nitric acid, may be used either in full strength or diluted with an equal quantity of water; but it must be used with great caution, as it destroys the skin rapidly.

7. *In Canker of the Foot.*—Quicksilver, 1 oz.; nitric acid, 2 oz. Mix in an earthen vessel, and when cold put into a wide glass bottle, and cork it. It may be mixed with lard, in the proportion of 1 to 3.

8. A similar application, which may be used alternately with the last.—Copper filings, $\frac{1}{2}$ oz.; nitric acid, 1 oz. Mix, and use in the same way.

9. Muriate of antimony, called butter of antimony; a strong but rather unmanageable caustic, and used either by itself or mixed with more or less water.

Mild solid caustics :—

10. Verdigris, either in powder or mixed with lard as an ointment, in the proportion of 1 to 3.

11. Red precipitate, do., do.

12. Burnt alum, used dry.

13. Powdered white sugar.

Mild liquid caustics :—

14. Solution of nitrate of silver, 5 to 15 grains to the ounce of distilled water.

15. Solution of blue Vitriol, of about double the above strength.

16. Chloride of zinc, 3 grains to the ounce of water.

CHARGES.

Charges are adhesive plasters which are spread while hot on the legs, and at once covered with short tow, so as to form a strong and unyielding support while the horse is at grass.

1. *Ordinary Charge.*—Burgundy pitch, 4 oz.; Barbadoes tar, 6 oz.; beeswax, 2 oz.; red lead, 4 oz. The first three are to be melted together, and afterwards the lead is to be added. The mixture is to be kept constantly stirred until sufficiently cold to be applied. If too stiff (which will depend upon the weather) it may be softened by the addition of a little lard or oil.

2. *Arnica Charge.*—Canada balsam, 2 oz.; powdered arnica leaves, $\frac{1}{2}$ oz. The balsam to be melted and worked up with the leaves, adding spirits of turpentine if necessary. When thoroughly mixed, to be well rubbed into the whole leg in a thin layer, and to be covered over with the Charge No. 1, which will set on its outside and act as a bandage, while the arnica acts as a restorative to the weakened vessels. This is an excellent application.

CORDIALS.

Cordials are medicines which act as warm temporary stimulants, augmenting the strength and spirits when depressed, and often relieving an animal from the ill effects of over-exertion. They act much in the same way on the horse and dog, but require to be given in different doses.

1. *Cordial Balls.*—Powdered caraway seeds, 6 drms.; ginger, 2 drms.; oil of cloves, 20 drops. Treacle enough to make into a ball.

2. Powdered aniseed, 6 drms.; powdered cardamoms, 2 drms.; powdered cassia, 1 drms.; oil of caraway, 20 drops. Mix with treacle into a ball.

3. *Cordial Drench.*—A quart of good ale warmed and with plenty of grated ginger.

4. *Cordial and Expectorant.*—Powdered aniseed, $\frac{1}{2}$ oz.; powdered squills, 1 drms.; powdered myrrh, 1 $\frac{1}{2}$ drms.; Balsam of Peru, enough to form a ball.

5. Licorice powder, $\frac{1}{2}$ oz.; gum ammoniacum, 3 drms.; balsam of Tolu, 1 $\frac{1}{2}$ drms.; powdered squills, 1 drms. Linseed meal and boiling water, enough to form into a mass.

DEMULCENTS.

Demulcents are medicines which are used in irritations of the bowels, kidneys, and bladder.

1. *Demulcent Drench.*—Gum Arabic, $\frac{1}{2}$ oz.; water 1 pint. The whole to be given.

2. Linseed, 4 oz.; water, 1 quart. Simmer till a strong and thick decoction is obtained, and give as above.

3. *Marshmallow Drench.*—Marshmallows, a double handful; water 1 quart. Simmer as in No. 2, and use in the same way.

DIAPHORETICS.

Diaphoretics are medicines which increase the insensible perspiration.

1. *In Hide-Bound.*—Emetic tartar, 1 $\frac{1}{2}$ drms.; camphor, $\frac{1}{2}$ drms.; ginger, 2 drms.; opium, $\frac{1}{2}$ drms.; oil of caraway, 15 drops. Linseed meal and boiling water, to form a ball, which is to be given twice or thrice a week.

2. *In Hide-Bound* (but not so efficacious).—Antimonial powder, 2 drms.; ginger, 1 drms.; powdered carraways, 6 drms.; oil of aniseed, 20 drops. Mix as above.

These remedies require exercise in clothing to bring out their effects after which the horse should be wiped till quite dry.

DIGESTIVES.

Digestives are applications which promote suppuration, and the healing of wounds or ulcers.

1. *Digestive Ointment.*—Red precipitate, 2 oz.; Venice turpentine, 3 oz.; beeswax, 1 oz.; hog's lard, 4 oz. Melt the last three ingredients over a slow fire, and, when nearly cold, stir in the powder.

DIURETICS.

Diuretics are medicines which promote the secretion and discharge of urine, the effect being produced in a different manner by different medicines; some acting directly upon the kidneys by sympathy with the stomach, while others are taken up by the blood-vessels, and in their elimination from the blood cause an extra secretion of the urine. In either case their effect is to diminish the watery part of the blood, and thus promote the absorption of fluid effused into any of the cavities, or into the cellular membrane, in the various forms of dropsy.

1. *Stimulating Diuretic Ball for the Horse.*—Powdered resin, sal prunelle, Castile soap, of each 3 drms.; oil of juniper, 1 drms. Mix.

2. *A more Cooling Diuretic Ball.*—Powdered niter, $\frac{1}{2}$ to 1 oz.; camphor and oil of juniper, of each 1 drms.; soap, 3 drms. Mix, adding linseed meal enough to form a ball.

3. *Diuretic Powder for a Mash.*—Niter and resin, of each $\frac{1}{2}$ to 1 oz. Mix.

4. *Another more Active Powder.*—Niter, 6 drms.; camphor, 1 $\frac{1}{2}$ drms. Mix.

EMBROCATIONS.

Embrocations or liniments are stimulating or sedative external applications, intended to reduce the pain and inflammation of internal parts when rubbed into the skin with the hands.

1. *Mustard Embrocation.*—Best flour of mustard, 6 oz.; liquor of ammonia, 1 $\frac{1}{2}$ oz.; oil of turpentine, 1 $\frac{1}{2}$ oz. Mix with sufficient water to form a thin paste.

2. *Stimulating Embrocation.*—Camphor, $\frac{1}{2}$ oz.; oil of turpentine and spirits of wine, of each 1 oz. Mix.

3. *Sweating Embrocation for Windgalls, etc.*—Strong mercurial ointment, 2 oz.; camphor, $\frac{1}{2}$ oz.; oil of rosemary, 2 drms.; spirits of turpentine, 1 oz. Mix.

4. *Another, but stronger.*—Strong mercurial ointment, 2 oz.; oil of bay, 1 oz.; oil of origanum, $\frac{1}{2}$ oz.; powdered cantharides, $\frac{1}{2}$ oz. Mix.

5. *A most Active Sweating Embrocation.*—Red iodide of mercury, $\frac{1}{2}$ to 1 drms.; powdered arnica leaves, 1 drms.; soap liniment, 2 oz. Mix.

6. This must be repeated until a blister is raised, which usually takes two or three applications. It may then be omitted for a week.

EMULSIONS.

Emulsions are very useful in the chronic cough of the horse.

1. *Simple Emulsion.*—Linseed oil, 2 oz.; honey, 3 oz.; soft water, 1 pint; subcarbonate of potass, 1 dr. Dissolve the honey and potass in the water; then add the linseed oil by degrees in a large mortar, when it should assume a milky appearance. It might be given night and morning.

2. *Another more Active Emulsion.*—Simple emulsion, No. 1, 8 oz.; camphor, 1 dr.; opium in powder, $\frac{1}{2}$ dr.; oil of aniseed, 30 drops. Rub the last three ingredients together in a mortar with some white sugar; then add the emulsion by degrees.

EXPECTORANTS.

Expectorants excite or promote discharge of mucus from the lining membrane of the bronchial tubes, thereby relieving inflammation and allaying cough.

1. *In Ordinary Cough without Inflammation.*—Gum ammoniacum, $\frac{1}{2}$ oz.; powdered squill, 1 dr.; Castile soap, 2 drms. Honey enough to form a ball.

2. *In Old Standing Cough (Stomach).*—Assafœtida, 3 drms.; galbanum, 1 dr.; carbonate of ammonia, $\frac{1}{2}$ dr.; ginger, $1\frac{1}{2}$ dr. Honey enough to form a ball.

3. *A Strong Expectorant Ball.*—Emetic tartar, $\frac{1}{2}$ dr.; calomel, 15 grs.; digitalis, $\frac{1}{2}$ dr.; powdered squills, $\frac{1}{2}$ dr. Linseed meal and water enough to form a ball, which is not to be repeated without great care.

FEBRIFUGES.

Fever medicines are given to allay fever, which they do by increasing the secretions of urine and sweat, and also by reducing the action of the heart.

1. *Fever Ball.*—Niter, 4 drms.; camphor, 1 dr.; calomel and opium, of each 1 scruple. Linseed meal and water enough to form a ball.

2. *Another.*—Emetic tartar, $1\frac{1}{2}$ to 2 drms.; compound powder of tragacanth, 2 drms. Linseed meal as above.

3. *Another.*—Niter; 1 oz.; camphor, 2 drms. Mix as above.

4. *Cooling Mash.*—Niter, 1 oz., may be given in a bran mash.

5. *Cooling Drench.*—Niter, 1 oz.; sweet spirits of niter, 2 oz.; tincture of digitalis, 2 drms.; whey, 1 pint.

CLYSTERS.

Clysters are intended either to relieve obstructions or spasm of the bowels, and are of great use. They may in the general way be of warm water or gruel, of which some quarts will be required in colic. They should be thrown up with the proper syringe, provided with valves and a flexible tube.

1. Turpentine clyster in colic, see ANTISPASMODICS.

2. Aperient clysters, see APERIENTS.

3. *Anodyne Clyster in Diarrhoea.*—Starch, made as for washing, 1 quart; powdered opium, 2 drms. The opium is to be boiled in water, and added to the starch.

LOTIONS.

Lotions are liquids applied to the external parts when inflamed, and they act by reducing the temperature, and by giving tone to the vessels of the part.

1. *Cooling Lotion in Stiffness from Bruises or Work.*—Tincture of

arnica, 1 dr.; spirits of wine, 7 dr. Mix and rub well into the parts, before the fire, with the hand.

2. *For Internal Canker.*—Nitrate of silver, 10 grs.; distilled water, 1 oz. Mix, and drop in every night.

3. *Cooling Lotion for External Inflammation.*—Goulard extract, 1 oz.; vinegar, 2 oz.; spirits of wine, or gin, 3 oz.; water $1\frac{1}{2}$ pint. Mix and apply with a calico bandage.

4. *Another, useful for Inflamed Legs or for Called Shoulders or Back.*—Sal ammoniac, 1 oz.; vinegar, 4 oz.; spirits of wine, 2 oz.; tincture of arnica, 2 drms.; water, $\frac{1}{2}$ pint. Mix.

5. *Lotion for Foul Ulcers.*—Sulphate of copper, 1 oz.; nitric acid, $\frac{1}{2}$ oz.; water, 8 to 12 oz.

OINTMENTS.

Ointments are greasy applications, consisting of a powerful drug mixed with lard, or some similar compound, and thus applied to the sore; they are generally more properly described under the several heads for which they are used. (See ASTRINGENTS, ANODYNES, ETC.)

STIMULANTS.

By this term is understood those substances which excite the action of the whole nervous and vascular systems; almost all medicines are stimulants to some part or other; as, for instance, aperients, which stimulate the lining of the bowels, but to the general system are lowering. On the other hand, stimulants, so called, excite and raise the action of the brain and heart.

1. Old ale, 1 quart; carbonate of ammonia, $\frac{1}{2}$ to 2 drms.; tincture of ginger, 4 drms. Mix, and give as a drench.

2. For other stimulants, see CORDIALS.

STOMACHICS.

Stomachics are medicines given to improve the tone of the stomach when impaired by bad management or disease.

1. *Stomachic Ball.*—Powdered gentian, $\frac{1}{2}$ oz.; powdered ginger, $1\frac{1}{2}$ dr.; carbonate of soda, 1 dr. Treacle to form a ball.

2. *Another.*—Cascarilla powdered, 1 oz.; myrrh, $1\frac{1}{2}$ dr.; Castile soap, 1 dr. Mix, with syrup or treacle, into a ball.

3. *Another.*—Powdered Colombo, $\frac{1}{2}$ to 1 oz.; powdered cassia, 1 dr.; powdered rhubarb, 2 drms. Mix as in No. 2.

TONICS.

Tonics augment the vigor of the whole body permanently, whilst stimulants only act for a short time. They are chiefly useful after low fever.

1. *Tonic Ball.*—Powdered yellow bark, 1 oz.; ginger, 2 drms.; carbonate of soda, $\frac{1}{2}$ dr. Form into a ball with linseed meal and water.

Another.—Sulphate of iron, $\frac{1}{2}$ oz.; extract of camomile, 1 oz. Mix, and form into a ball.

Another.—Arsenic, 10 grs.; ginger, 1 dr.; powdered aniseed, 1 oz.; compound powder of tragacanth, 2 drms.; syrup enough to form a ball. It is a very powerful tonic.

WORM MEDICINES.

Worm medicines are given in order to expel worms, which they do partly from their specific action upon the worm itself, and partly by their purgative qualities, which all ought to possess, or to be followed by medicines of that class.

1. Calomel, 1 to 2 drms.; Barbadoes aloes, 3 to 6 drms.; ginger, 1 dr.; soap, 3 drms. Mix.

2. *Worm Drench.*—A pint of linseed oil every day.