

H O R S E.

THE reduction of the horse to a domestic state, is the greatest acquisition from the animal world, which was ever made by the art and industry of man. This noble animal partakes of the fatigues of war, and seems to feel the glory of victory. Equally intrepid as his master, he encounters danger and death with ardour and with magnanimity. He delights in the noise and tumult of arms, and annoys the enemy with resolution and alacrity. But it is not in perils and conflicts alone that the horse willingly co-operates with his master; he likewise participates of human pleasures. He exults in the chase and the tournament; his eyes sparkle with emulation in the course. But, though bold and intrepid, he suffers not himself to be carried off by a furious ardour; he represses his movements, and knows how to govern and check the natu-

* *Equus caballus*, cauda undique setosa; *Linn. Syst. Nat.* p. 100.

Hors—Hoof consisting of one piece; six cutting teeth in each jaw; *Pennant, Synops. of Quadrap.* p. 1.

ral vivacity and fire of his temper. He not only yields to the hand, but seems to consult the inclination of his rider. Uniformly obedient to the impressions he receives, he flies or stops, and regulates his motions entirely by the will of his master. He, in some measure, renounces his very existence to the pleasure of man. He delivers up his whole powers; he reserves nothing, and often dies rather than disobey the mandates of his governor.

These are features in the character of the horse, whose natural qualities have been matured by art, and turned with care to the service of man. His education commences with the loss of liberty, and is completed by restraint. The slavery of the horse is so ancient and so universal, that he is rarely seen in a natural state. When employed in labour, he is always covered with the harness; and, even during the time destined for repose, he is never entirely delivered from bonds. If sometimes permitted to roam in the pasture, he always bears the marks of servitude, and often the external impressions of labour and pain. His mouth is deformed by the perpetual friction of the bit; his sides are galled with wounds, or furrowed with cicatrices; and his hoofs are pierced with nails. The natural gestures of his body are constrained by the habitual pressure of fetters, from which it would be in vain to deliver him; for he would not be more at liberty. Those horses, the servitude of which is most

mild, which are kept solely for the purposes of luxury and magnificence, and whose golden chains only gratify the vanity of their masters, are more dishonoured by the elegance of their trappings, and by the plaits of their hair, than by the iron shoes on their feet.

Art is always excelled by Nature; and, in animated beings, liberty of movement constitutes the perfection of their existence. Examine these horses which have multiplied so prodigiously in Spanish America, and live in perfect freedom. Their motions are neither constrained nor measured. Proud of their independence, they fly from the presence of man, and disdain all his care. They search for, and procure the food that is most salutary and agreeable. They wander and frisk about in immense meadows, and collect the fresh productions of a perpetual spring. Without any fixed habitation, or other shelter than a serene sky, they breathe a purer air than in those musty vaults in which we confine them, when subjected to our dominion. Hence wild horses are stronger, lighter, and more nervous than most of those which are in a domestic state. The former possess force and dignity, which are the gifts of Nature; the latter have only address and gracefulness, which are all that art can bestow.

These wild horses are by no means ferocious in their temper; they are only wild and fiery. Though of strength superior to most ani-

mals,

mals, they never make an attack. But, when assaulted, they either disdain the enemy, bounce out of his way, or strike him dead with their heels. They associate in troops from no other motive than the pleasure of being together; for they have no fear; but acquire a mutual attachment to each other. As grass and vegetables constitute their food, of which they have enough to satisfy their appetite, and, as they are not carnivorous, they neither make war with other animals, nor among themselves. They dispute not about their common nourishment, and never have occasion to snatch prey from each other, the general source of quarrels and combats among the rapacious tribes. Hence they live in perpetual peace; because their appetites are simple and moderate, and they have no objects to excite envy.

All these features are apparent in young horses bred together in troops. Their manners are gentle, and their tempers social; their force and ardour are generally rendered conspicuous by marks of emulation. They anxiously press to be foremost in the course, to brave danger in traversing a river, or in leaping a ditch or precipice; and it has been remarked, that those which are most adventurous and expert in these natural exercises, are the most generous, mild, and tractable, when reduced to a domestic state.

Wild horses are mentioned by several ancient authors. Herodotus takes notice of white

savage horses on the banks of the Hypanis in Scythia; and, in the northern part of Thrace, beyond the Danube, he remarks, that there were wild horses, covered all over with hair, five inches long. Aristotle says, they were to be found in Syria; Pliny, in the northern regions; and Strabo, in Spain and the Alps. Among the moderns, Cardan says the same thing of Scotland, and the Orkney isles*; Olaus, of Muscovy; Dapper, of the island of Cyprus, where, he says, there were beautiful wild horses, of great strength and swiftness†; and Struys, of the island of May, one of the Cape de Verdes, where he saw wild horses of a small stature‡. Leo of Africa likewise relates, that there were wild horses in the deserts of Africa and Arabia; and he assures us, that he saw, in the solitudes of Numidia, a colt with crisped hair, and a crisped mane||. Marmol confirms this fact, by informing us, that small wild horses, some of them of an ash-colour, and others white, with short curled hair and manes, are to be found in the Libyan and Arabian deserts§; He adds, that they outrun the dogs and domestic horses. We likewise learn, from the Lettres Edifiantes**, that there are small wild horses in China.

* Aldrovand. de Quadrap. Soliped. lib. i. p. 19.

† See a Descript. des Isles de l'Archipel. p. 50.

‡ Voyages de Struys, tom. i. p. 11.

|| Descript. Africa, part ii. vol. ii. p. 750.

§ L'Afrique de Marmol, tom. i. p. 50.

** Lettres Edifiantes, recueil xxvi. p. 371.

But, as Europe is now almost equally peopled, wild horses are no where to be found in this quarter of the globe. Those in America are the offspring of domestic horses, transported originally from Europe by the Spaniards. In these uninhabited, or rather depopulated regions, horses have multiplied prodigiously. That this species of animal was unknown in the New World, appears from the terror and astonishment expressed by the Mexicans and Peruvians at the sight of horses and their riders. The Spaniards carried great numbers of horses to these regions, both with a view to their service, and to the propagation of the breed. Many, accordingly, were left on the islands, as well as on the Continent, where they have multiplied like other wild animals. M. de Salle*, in the year 1685, saw, near the bay of St. Louis in North America, these horses grazing in the meadows; and they were so wild that he could not approach them. The author of the history of the Buccaneers † remarks, 'That troops of horses, to the number of 500, are sometimes seen in the island of St. Domingo, who all run together; that, when they perceive a man, they all stop; and that one of them approaches to a certain distance, blows through his nostrils, takes flight, and is instantly followed by the

* See les Dernieres Decouvertes dans l'Amer. septen. de M. de Salle, p. 250.

† L'Hist. des Avateurs, Flibustiers, tom. i. p. 110.

'whole troop.' He adds, that he is uncertain whether these horses have degenerated by becoming wild; but that he found none of them so handsome as those of Spain, though they sprung from the same race. 'They have,' he continues, 'very gross heads and limbs, and long necks and ears. The inhabitants tame them with ease, and then train them to labour. In taking them, gins of ropes are laid in the places where they frequent. When caught by the neck, they soon strangle themselves, unless some person arrives to disentangle them. They are tied to trees by the body and limbs, where they are left for two days without victuals or drink. This trial is generally sufficient for rendering them more tractable, and they soon become as gentle as if they had never been wild; and, even if they should by accident regain their liberty, they never resume their savage state, but know their masters, and allow themselves to be approached, and retaken with ease *.'

These

* M. Garfaut mentions another method of taming wild horses. 'When the colts,' he observes, 'are not very early tamed, it sometimes happens, that the approach of man strikes them with terror; that they defend themselves with their heels and teeth, in such a manner, that it is almost impossible to dress or shoe them: if not broke by gentleness and patience, they are prevented from sleeping till they fall down with weakness. During this operation, a man continues, day and night, at their heads, giving them, from time

These facts prove horses to be naturally of gentle dispositions, and much disposed to associate with man. They never forsake the abodes of men, to regain their liberty in the forests. They discover, on the contrary, great anxiety to return to the stable, where they find only coarse food, which is always the same, and often measured to them more by the rules of economy, than by the strength of their appetite. But the sweets of habit supply all they have lost by slavery. After being oppressed with fatigue, the place of repose is full of delight. They smell it at a distance, can distinguish it in the midst of great cities, and seem uniformly to prefer bondage to liberty. They form a second nature out of those habits to which they have been forced to submit; for horses, after being abandoned in the forests, have been known to neigh continually, in order to be heard, to run to the voice of man, and even to grow meagre, and die in a short time, though surrounded with a profusion of nourishment.

Thus, it is obvious, the manners of a horse originate entirely from his education, which is accomplished by a care and industry bestowed by man upon no other animal; but he is amply rewarded by the perpetual services of this noble and laborious creature,

time to time, handfuls of hay. When treated in this manner, it is astonishing how soon their tempers are softened. Some horses, however, require to be kept awake for eight days.* See Nouveau parait Maréchal, p. 89.

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The foals are separated from their mothers at the age of five, six, or at most seven months; for experience shows, that, when allowed to suck ten or eleven months, though generally fatter and larger, they are not of equal value as those which have been more early weaned. After six or seven months, the foals are removed from their mothers, and are fed twice a-day with bran and a little hay, the quantity of which is augmented in proportion as they advance in age. They are confined to the stables as long as they discover any anxiety to return to their mothers. But when this inquietude is gone, they are allowed to go out, and are conducted to the pasture: They must not, however, be permitted to graze when their stomach is empty. An hour before being put to the grass, they should have a little bran, be made to drink, and should never be exposed to great colds or to rain. In this manner they pass the first winter. In the month of May following, they may be allowed to pasture freely every day, and to remain out continually till the end of October, observing only not to permit them to eat the aftermaths. If accustomed to feed upon this delicate herbage, they will reject hay, which ought nevertheless, together with bran, to be their principal food during the second winter. They are managed in the same manner, namely, allowing them to pasture in winter during the day, and in summer during both day and night, till they arrive

arrive at the age of four years, when they are confined to dry food*. This change of nourishment requires some precautions. During the first eight days, they should have only straw; and a few vermifuge draughts may be given, to destroy those worms which may have been engendered by the bad digestion of crude herbs. M. de Garfaut † recommends this practice, the utility of which he had often experienced. It is, however, an established fact, that the stomachs of horses, at all ages, and in all circumstances, whether they feed upon grass, or upon oats and hay, are perpetually stuffed with a prodigious multitude of worms ‡. The stomach of the ass is always in the same condition; and yet none of these animals are incommoded by this species of vermin. These worms, therefore, ought not to be regarded as an accidental malady, occasioned by the indigestion of crude herbs, but rather as an effect depending on the common food and ordinary digestion of the horse and ass.

After young colts are weaned, they should not be put into too warm a stable, otherwise they will be rendered too delicate and too sensible to the impressions of the air. They should

* This may be the practice in France; but, in Britain, horses, of all ages, are allowed to pasture freely in summer, without receiving any injury.

† Nouveau parait Maréchal, p. 84.

‡ This assertion appears to be too general; for, in this country, at least, worms are by no means so frequent.

be often supplied with fresh litter, and kept clean by frequent friction. But they ought neither to be tied nor handled till they are near three years of age. The manger and rack should not be too high; for the necessity of stretching their neck and raising their head, may induce a habit of keeping them in that position, which would spoil their neck. When 12 or 18 months old, their tails should be cut; the hair will shoot afterwards, and become stronger and thicker. At the age of two years, the male colts should be put with the horses, and the females with the mares. Without this precaution, the young males would fatigue and enervate themselves.

At the age of three years, or three and a half, we should begin to dress the colts, and to render them tractable. At first, a light easy saddle should be placed on them, and allowed to remain two or three hours each day. They should likewise be accustomed to receive a snaffle into their mouths, and to allow their feet to be lifted and struck, in imitation of shoeing. If destined for the coach or the draught, they ought to be harnessed as well as snaffled. A bridle is unnecessary at first: By means of a halter or cavesson on their nose, they may be made to trot up and down on a smooth piece of ground, with only a saddle and harness on their bodies: And, when they turn easily, and approach, without fear, the man who holds the *longe* or halter, they may then be mounted and dismounted, without

making

making them walk, till they be four years old; for before this period, a horse has not strength enough to walk with a rider on his back. But, at four years, they may be mounted, and walked or trotted at small intervals*. When a coach-horse is accustomed to the harness, he may be yoked with a bred horse, and guided with a *longe* or halter passed through the bridle, till he begins to know his duty. The coachman may next try to make him draw, with the assistance of a man to push him gently behind, and even to give him some slight lashes. All this education should be gone through, before the young horses have their diet changed; for, after being fed with grain or straw, they are more vigorous, and consequently less docile, and more difficult to † break ‡.

The bit and the spur have been contrived to command the obedience of horses; the bit for the direction, and the spur for the quickness of their movements. Nature seems to have destined the mouth solely for receiving the impressions of taste and of appetite. But the mouth of the

* See Elements de Cavalerie de M. de la Gueriniere, tom. i. p. 140.

† Le Nouveau parfait Maréchal, par M. de Garfaut, p. 86.

‡ By this management, it is admitted, that horses may be easier broke. But, after they are allowed a full and generous diet, they are apt to become vicious and unruly. For this reason, connoisseurs in horsemanship maintain, that, to break horses when they are in the highest order and best fed, is by much the most preferable mode.

horse

horse is endowed with such amazing sensibility, that, to this organ, in place of the eye and ear, man applies for conveying the indications of his will to this animal. The slightest motion or pressure of the bit gives him notice, and determines his course. This organ of sensation has no fault but that of perfection; its too great sensibility requires the most dexterous management; for the smallest abuse spoils the mouth, by rendering it insensible to the impressions of the bit. The senses of seeing and hearing cannot be blunted in this manner: But it is probable, that all attempts to govern horses by these organs have been found inconvenient. Besides, the signs transmitted by the touch have a stronger effect upon animals in general, than those conveyed by the eye or ear. The situation of a horse's eyes, with regard to his rider or conductor, is extremely unfavourable: And though they be often animated and conducted by the ear, it appears that the use of this organ is abandoned to the coarser species of horses; for, in the menage, they are seldom addressed by the ear. In a word, when horses are well educated, the smallest pressure of the thighs, the slightest movement of the bit, are sufficient to direct them. Even the spur is almost useless, being seldom employed but to force them to exert violent motions: And when, from the ignorance of the horseman, he gives the spur, and at the same time retracts the bridle, the horse, finding himself incited on

one

one side and restrained on the other, is obliged to rear, or make a perpendicular bound.

By means of the bridle, the horse is taught to keep his head in the most beautiful and advantageous situation, and the smallest sign or slightest movement of the rider is sufficient to make the animal assume its different paces. The trot is perhaps the most natural motion of a horse; but the pace, and even the gallop, are most easy to the rider; and these are the two motions which are most in request. When a horse lifts his fore-leg in order to walk, this movement must be made with steadiness and facility, and the knee must likewise be bended. The lifted leg must appear, for a moment, to be supported, and, when let down, it must be firm, and equally supported on the ground, before the head receive any impression from this movement; for, when the leg falls suddenly down, and the head sinks at the same time, this motion is generally made to give a speedy relief to the other leg, which is not strong enough alone to support the whole weight of the body. This is a very great defect in a horse. It is also worthy of remark, that, when he rests on his heels, it is a sign of weakness*; and when he supports himself on his toes, it is an unnatural and fatiguing attitude, which the horse cannot long continue.

* The only sure mark of strength and soundness in a horse, is when he rests firmly upon his foot, without favouring any particular part of it.

Walking,

Walking, though the slowest of all motions, ought to be brisk, light, and neither too long nor too short. Lightness depends much on the freedom of the shoulders, and is distinguished by the manner in which the horse, in walking, carries his head. If he carries his head high and steady, he is generally vigorous and light. When the movement of the shoulders is not sufficiently free, the limbs are not lifted high enough, and the horse is apt to stumble upon the road. In walking, a horse should raise his shoulders, and lower his haunches*. He should also ele-

vate

* It may be of use to introduce here an explanation of the technical terms generally employed to express the different external parts of a horse. See the plate of the horse.

A The two bones corresponding to the temples of a man, and called by the same name.

B The eye-pits, or two cavities between the eye and ear, above the eye brows.

C The *osseus*. The parotid glands, situated between the ear, and the locking of the under jaw.

D The face or *chaufrein*. The fore part of the head from the eyes to the nostrils.

E The rim of the nostrils. The cartilage which forms the circular aperture of the nostrils, and terminates them above and below.

F Tip of the *sept*. The partition which divides the nostrils, terminating at the upper lip.

G to H The bones of the lower jaw.

H The chin.

I The beard.

Gatherers. The two fore teeth.

Middle teeth. Those adjoining to the gatherers.

Corner teeth. The last on each side.

T₉h,

vate and support his leg; but, if he supports it too long, and allows it to fall down slowly, he loses

Y₉hai. The two canine teeth on each side, and in each jaw.

Darr. The spaces between the cutting teeth and grinders, filled with ridges, which run across the palate.

K The Neck, which is bounded above by the mane, and below by the throat, extending from the shoulders to the head.

L The *Tuft* or *Toupet*. That part of the mane which lies between the two ears, and hangs down on the front.

M The *Withers*. The place where the two shoulders approach each other between the neck and back.

N The *Shoulders*, extending from the withers M, to the top of the fore hand, or fore-leg O.

P The *Chest* or breast.

Q The *Back*, reaching from the withers M, to the reins S.

R The *Nozel*. The part between the back and reins; a very absurd term, as the *nozel* is in the lower part of the belly.

S The *Reins*. This term is often used, though improperly, to express the whole spine of the horse.

T The *Sides*, which are formed and limited by the ribs.

V The *Coffer*. The hollow formed by the contour of the ribs. The same *Belly* is given to the part extending from V. to the flank.

X The *Flanks*. The extremity of the belly, at the termination of the ribs, below the kidneys, and reaching to the haunch-bones.

Y The *Haunch*, formed, as in man, by the haunch-bone.

Z The *Crupper*, which is round, and reaches from the kidneys to the tail.

The *Tail* is distinguished by two parts, the *hair* and the *raup*.

a The *Buttock*, are situated below the crupper and the origin of the tail, and extend to the place where the hind-leg joins the body.

b The *Shoulder-blade*.

c The *humerus*. Both of these are included by horsemen under the name of *Shoulder*.

d The *Elbow*.

e The *Arm*.

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X

f The

loses every advantage of lightness; his walk becomes hard, and he is good for nothing but state and parade.

But

- f* The *Knee*, or joint situated below the arm, a term improperly applied to a horse, as it corresponds to the wrist in man.
- g* The *Shank* or *cannon*. The second part of the fore-leg. It begins at the articulation of the knee, terminates at the fetlock joint *i*, and answers to the metacarpus in man.
- h* The *Tendon*, commonly called the back-sinew.
- i* The *Fetlock* joint.
- k* The *Tuft* of hair which surrounds a kind of soft horn situated behind the flank.
- l* The *Pastern*. The part of the leg which extends from the fetlock-joint to the hoof.
- m* The *Circlet*. The place where the hoof joins the leg, and is decorated with long hair falling down all around the hoof.
- n* The *Huf* represents the nail in man; the fore-part of it is called the *Toe*, and the sides the *Quarters*. The hind-part of the hoof is a little raised, and divided into two parts, both included under the name *Heel*: They extend to the middle of the under part of the foot, and arising again under the sole, or bottom of the foot, form the *Frog*.
- p* The *Saddle*, is properly the articulation of the knee, and contains the knee-pan.
- q* The *Thigh*. It extends from the saddle and extremity of the buttocks to the ham *r*, and answers to the leg in man. Accordingly, the horse's thigh has a fleshy part *r*, resembling the calf of a human leg.
- s* The *Hock* or *ham*, is the joint at the extremity of the thigh, and bends forwards. This articulation corresponds with the *Tarsus* in man. The hinder-part of the joint called the hock, is properly the *Heel*. What is commonly called the *great sinew*, which arises from the point of the hock, and terminates in the foot, is a tendon, answering to the tendo *Achillis* inserted into the human heel.
- u* The *Shank*.
- x* The *Pastern* joint.

Plate XL.



y The

But lightness is not the only good quality in the movements of the horse: They should likewise be equal and uniform both before and behind: For, if the crupper vibrates when the shoulders are supported, his motion will be jolting and incommodious to the rider. The same thing happens, when the horse lengthens so much the step of the hind-leg, that the foot lights beyond the print of the fore-foot. Horses with short bodies are subject to this fault. Those whose legs cross each other, or hew, have an unsteady motion; and, in general, long-bodied horses are most commodious to the rider, because he is placed at a greater distance from the two centres of motion, the shoulders and haunches, and is of course less jolted.

y The *Pafterer*.

z The *Fest*, as in the fore-leg.

This explanation of the particular terms, will render the general ones more easy and simple. A horse is divided into three principal parts, the *fore-hand*, the *body* or *carcase*, and the *hind-hand*. The *fore-hand* includes the head, neck, withers, breast, and fore-legs. The body is composed of the back, kidneys, ribs, belly, and flanks. The *hind-hand* comprehends the rump, haunches, tail, buttocks, stifle, thighs, hocks, and the other parts of the hind-legs.

By another mode of division, the horse is distinguished into four parts, the head, the body, and the fore and hind trains. The *body* is composed of the back, the kidneys, the belly, the ribs, and the flanks. The *fore train* consists of the neck, the shoulders, the breast, and the fore-legs; and the *hind train*, of the rump, the tail, the haunches, and the hind-legs.

The general mode of walking among quadrupeds is to lift, at one time, a fore-leg and a hind-leg of opposite sides. As their bodies rest on four points which form an oblong square, the most commodious manner of moving is to change two at a time in the diagonal; so that the centre of gravity of the animal's body may always remain nearly in the direction of the two points of support which are not in motion. In the three natural movements of the horse, namely, the walk, the trot, and the gallop, this mode is always observed, though with some variations. In walking there are four beats or times of moving; if the right fore-leg moves first, the left hind-leg instantly follows; then the left fore-leg moves, and is instantly followed by the right hind-leg. Thus the right fore-foot rests first on the ground, then the left hind-foot, next the left fore-foot, and, lastly, the right hind-foot, which makes a motion consisting of four beats and three intervals, of which the first and third are shorter than the middle one. In the trot, there are only two beats: If the right fore-leg parts from the ground, it is accompanied, at the same time, by the left hind-leg; then the left fore-leg moves at the same time with the right hind-leg; so that, in this motion, there are but two beats and one interval; the right fore-leg and the left hind-leg rests on the ground at the same time, and the same thing happens with regard to the left fore-leg and the right hind leg. In the gallop,

there

there are commonly three beats: The left hind-leg moves first and rests first on the ground; then the right hind-leg is raised along with the left fore-leg, and both rest on the ground at the same time; and, lastly, the right fore-leg is raised instantly after the left fore-leg and the right hind-leg, and falls last upon the ground. Thus, in the gallop, there are three beats and two intervals: In the first interval, when the motion is quick, the four legs, for an instant, are in the air at the same time, and the four shoes appear at once. When the horse has supple limbs and haunches, and moves with agility, the gallop is most perfect, and the feet fall at four times, first, the left hind-leg, then the right hind leg, next the left fore-leg, and, lastly, the right fore-leg.

Horses generally gallop upon the right foot, in the same manner as they set out in walking or trotting, with the right fore-leg. In galloping, they first cut the road with the right fore-leg, which is farther advanced than the left; and the right hind-leg, which immediately follows the right fore-leg, is likewise farther advanced than the left hind-leg. Hence the left leg, which bears the whole weight, and pushes the others forward, has the greatest fatigue; so that it would be proper to learn horses to gallop alternately upon the left and right legs; because it would enable them to continue this violent motion much longer. This is practised at the

menage, but perhaps for no other reason, but because, in galloping round a circle, the centre of which is sometimes on the right, and sometimes on the left, the rider is frequently obliged to change his hand.

In walking, the horse raises his feet very little above the surface; in trotting, he elevates them a little more, and, in galloping, still higher. The walk ought to be smart, light, and sure; the trot should be firm, quick, and equally supported, and the fore-legs pushed with rapidity by the hind ones. The trotting horse should carry his head pretty high, and keep his body straight; for, if the haunches rise and fall alternately at every movement, and if the crupper rocks, the animal is too weak for this motion. To throw the fore-legs out is another fault: They ought always to be on the same line with those behind, and to efface their prints*. When one of the hind-legs moves, and if the fore-leg on the same side rests too long, the movement becomes hard by this resistance. It is for this reason, that the interval between the two beats of the trot ought to be short: But, however short it may be, this resistance is sufficient to make the trot harder than the walk or gallop.

* Here the author differs from all our expert horsemen, who uniformly prefer those horses which go wider behind than before; because horses of this kind are not so apt to cut their legs, are more agile in their movements, and can support greater fatigue in long journeys, &c.

The spring of the hocks contributes as much to the motions of galloping as that of the loins. While the latter make an effort to elevate and push forward the anterior parts, the spring of the hocks breaks the stroke and softens the shock. Hence the more uniform and strong the spring of the hocks, the gallop is softer and more rapid.

Though walking, trotting, and galloping, be the natural and ordinary movements of horses, yet some of them have another natural motion, known by the name of *ambling*, or *pacing*, which is very different from the other three; and though less quick than the hard trot or gallop, it appears, at first sight, to be extremely fatiguing to the animal. The foot of the horse, in this movement, grazes the surface still nearer than in walking, and each step is much longer. But, what is singular, to make a pace, the two legs of the same side part from the ground at the same time, the fore and hind leg, for example, of the right side, and then the two legs of the left side; so that each side of the body alternately want support, which must greatly fatigue the animal, who is obliged to support a balance forced by the rapidity of a movement which is hardly elevated above the ground; for nothing but the rapidity of the motion, and the smallness of the elevation, could possibly prevent the creature from falling on his side. In the motion of pacing, as in that of trotting, there are

only two beats. This movement, which is very laborious to the horse, and in which he ought not to be indulged except on smooth ground, is very easy to the rider; it has not the hardness of the trot, because the hind leg moves along with the fore one, and creates no resistance to the motion. We are told by connoisseurs, that horses which naturally amble, never trot, and that they are much weaker than those which have no such movement. Colts, indeed, often assume this mode of moving, when forced to go quick, and when they have not strength enough to trot or to gallop; and even good horses, after being fatigued, or when they begin to decay, are apt, when pushed, to amble spontaneously*.

The amble may be therefore regarded as a motion occasioned by weakness or defect. But there are two other movements assumed spontaneously by weak or decayed horses, which are still more defective than that of the amble, and are known by the name of *Broken ambles*. The one is a motion between walking and ambling, and the other between trotting and galloping. Both proceed from great fatigue, or weakness in the loins, and are conspicuous in many of our hackney and post-horses.

Of all quadrupeds, the horse possesses, along with grandeur of stature, the greatest elegance and proportion of parts. By comparing him with the animals immediately above or below

* See l'Ecole de Cavalerie de M. de la Guerinière, p. 77.
him,

him, we find that the ass is ill made; that the head of the lion is too large; that the limbs of the ox are too slender and too short, in proportion to the size of his body; that the camel is deformed; and that the grosser animals, as the rhinoceros and elephant, may be considered as rude and shapeless masses. The great difference between the head of man and that of the quadrupeds, consists in the length of their jaws, which is the most ignoble of all characters. But, though the jaws of the horse be very long, he has not, like the ass, an air of imbecility, nor, like the ox, of stupidity. The regularity and proportion of the parts of his head give him a light and sprightly aspect, which is well supported by the beauty of his chest. He elevates his head, as if anxious to exalt himself above the condition of quadrupeds. In this noble attitude, he regards man face to face. His eyes are open and lively, his ears handsome and of a proper height, being neither too long, like those of the ass, nor too short, like those of the bull. His mane adorns his neck, and gives him the appearance of strength and of courage. His long bushy tail covers and terminates with advantage the extremity of his body. His tail, very different from the short tails of the deer, elephant, &c. and from the naked tails of the ass, camel, rhinoceros, &c. is formed of long thick hairs which seem to arise from his crupper, because the trunk from which they proceed is very short.

short. He cannot, like the lion, elevate his tail, but, though pendulous, it becomes him better. And, as he can move it from side to side, it serves him to drive off the flies which incommodate him; for, though his skin be very firm, and well garnished with close hair, it is extremely sensible.

The attitude of the head and neck contributes more than all the other parts of his body, to give him a graceful aspect. The superior part of the neck from which the mane issues, should first rise in a straight line from the withers, and then, as it approaches the head, form a curve nearly similar to that of a swan's neck. The inferior part of the neck should have no curvature, but rise in a straight line from the poidrel, or breast, to the under jaw, with a small inclination forward. If it rose in a perpendicular direction, its symmetry and gracefulness would be diminished. The superior part of the neck should be thin, with little flesh near the mane, which ought to be garnished with long delicate hair. A fine neck should be long and elevated, but proportioned to the general size of the animal. When too long, the horse commonly throws back his head; and, when too short and fleshy, the head is heavy to the hand. The most advantageous position of the head is, when the front is perpendicular to the horizon.

The head of a horse should be thin and meagre, and not too long. The ears should be
small,

small, erect, but not too stiff, narrow, and placed on the upper part of the head, at a proper distance from each other. The front should be narrow and a little convex, the eye-pits, or hollows between the eyes and ears, well filled, and the eye-lids thin; the eyes should be pretty large and prominent, clear, lively, and full of fire; the pupil should be rather large, the under jaw a little thick, but not fleshy, the nose somewhat arched, the nostrils open and deep, and divided by a thin septum or partition. The mouth should be delicate and moderately split, lips thin, withers sharp and elevated, the shoulders flat, and not confined; the back equal, a little arched lengthwise, and raised on each side of the back-bone, which ought to have the appearance of being sunk; the flanks should be short and full, the crupper round and plump, the haunches well furnished with muscular flesh, the dock or fleshy part of the tail firm and thick, the thighs large and fleshy, the hock round before, broad on the sides, and tendinous behind; the shank thin before, and broad on the sides; the tendon (or tendo Achillis) prominent, strong, and well detached from the leg-bone, and the fetlock somewhat prominent, and garnished with a small tuft of long hair behind; the pasterns should be of a middling length, and pretty large; the coronet a little elevated, the hoof black, solid, and shining, the instep high, the quarters round, the heels broad, and a little prominent,
the

the frog thin and small, and the sole thick and concave.

Few horses possess all these perfections. The eyes are subject to many faults, which it is often difficult to distinguish. In a sound eye, two or three foot-coloured spots appear through the cornea above the pupil; for, unless the cornea be clean and transparent, these spots cannot be seen. When the pupil is small, long, and narrow, or surrounded with a white circle, or when it is of a greenish blue colour, the eye is unquestionably bad*.

Without entering into a long detail, the following general remarks will enable the reader to form a judgment of the principal perfections and imperfections of a horse. The motion of the ears affords a tolerable criterion: When a horse walks, the point of his ears should incline forwards; when fatigued, his ears hang down; and, when angry, or of a malignant disposition, he points alternately one of his ears forwards, and another backwards. Every horse turns his ears to that side from which he hears any noise; and when struck on the back or on the crupper, he turns his ears backward. Horses with hollow eyes, or with one eye smaller than the other, have generally a bad sight. Those whose mouths are dry have not such good constitutions

* There are many other marks of bad eyes; but, as their colour depends much on the light in which they are viewed, little information can be derived from it.

as those that have moist mouths, and foam with the bit*. The shoulders of a saddle-horse should be flat, supple, and not too fleshy. A draught-horse, on the contrary, ought to have thick, round, fleshy shoulders. If, however, the shoulders of a saddle-horse be too meagre, and the bones advance too much through the skin, it is an indication that his shoulders are not free, and that, of course, he will be unable to undergo much fatigue. Another defect of a saddle-horse is to have the poitrel, or breast, too prominent, and the fore-legs inclined or placed too far backward; because, in this case, he is subject to lean heavy upon the hand in galloping, and even to stumble and fall. The length of the legs should be proportioned to the stature of the horse. When the fore-legs are too long, he is not steady on his feet; and, when too short, he bears heavy on the hand. It has been remarked, that mares are more liable than horses to be low before, and that stone-horses have thicker necks than mares or geldings.

It is of great importance to know the age of a horse. The eye-pits of old horses are commonly hollow: But this mark is equivocal; for young horses begot by old stallions have likewise hollow eye-pits. The teeth afford the best criterion of the age of horses. The horse has, in all, 40 teeth, viz. 24 grinders, 4 canine, or tusks, and

* A dry or wet mouth is a consequence of the particular state of the body at the time; and, therefore, can be no indication of the general constitution or strength of a horse.

12 fore-teeth. Mares have either no dog-teeth, or very short ones. The canine and fore-teeth only afford indications of the age. Five days after birth, the fore-teeth begin to shoot. These first teeth are round, short, and not very solid; and they fall out at different times, to be replaced by others. At two years and a half, the four middle fore-teeth fall out, two above and two below. The next year, other four are shed, one on each side of the first, which are now replaced. At four years and a half, other four fall out, always on each side of those which were formerly shed and replaced. These last four foal-teeth are succeeded by other four, which grow not near so quickly as the first eight. It is from these four, called corner teeth, that the age of a horse is distinguished; and they are easily known, being always the third, both above and below, reckoning from the middle to the extremity of the jaw. They are hollow, and have a black mark in their cavities. At four and a half, or five years, these teeth hardly rise above the gums, and their cavities are very perceptible. At six years and a half, the cavities begin to fill up, and the mark gradually diminishes till the animal is seven and a half, or eight years, when the cavities are perfectly filled, and the mark totally effaced. After this period, the age is attempted to be discovered by the tushes or canine teeth. These four teeth lie immediately adjacent to the other four

above

above described. Neither the tushes nor grinders shed. At the age of three years and a half, the two tushes of the under jaw generally begin to shoot; the two of the upper jaw appear at the age of four, and, till six years be completed, they are very sharp. At ten years, the tushes of the upper jaw seem to be blunted, worn out, and long, because the gums retract with age; and the more this appearance takes place, the older is the horse. From ten to thirteen or fourteen years, there are hardly any marks by which the age may be discovered. Some hairs of the eye-brows, indeed, begin to grow white; but this mark is equally equivocal as that derived from the depth of the eye-pits; for, it has been remarked, that horses begot by old stallions and old mares, have white hairs in the eye-brows at the age of nine or ten. The teeth of some horses are so hard, that they wear not by eating, and never lose the black mark. But these horses are easily known, because the cavities of their teeth are perfectly filled up, and their tushes are very long*. The age of a horse may likewise be known, though with less precision, by the bars or ridges of the palate, which are effaced in proportion as he advances in years.

At the age of two years, or two and a half, the horse is in a condition to propagate; and the mares, like most other females, are still sooner ripe for this operation. But the foals produced from such early embraces are weakly,

* See l'Ecole de Cavalerie de M. de la Gueriniere, p. 25.

or ill-formed. The horse should never be admitted to the mare till he is four or four and a half; and even this period is too early, except for coarse or draught-horses. When fine horses are wanted, the male should not be admitted to the mare before he is six years old; and Spanish stallions not till they be full seven. The mares may be one year younger: They generally come in season from the end of March to the end of June. But their chief ardour for the horse lasts not above 15 days or three weeks; and, during this critical period, the mare should be admitted to the stallion: He ought to be sound, vigorous, well made, and of a good breed. To procure fine saddle-horses, foreign stallions, as Arabians, Turks, Barbs, and Andalousians, are preferable to all others. Next to these, British stallions are the best; because they originally sprung from those above mentioned, and are very little degenerated. Italian stallions, especially those of Naples, are extremely good. With mares of a proper size, they produce excellent horses for the saddle; and with strong large mares, they produce good coach horses. It is alledged, that, in France, Britain, &c. the Arabian and Barbary stallions generally beget horses larger than themselves; and that those of Spain, on the contrary, produce a breed more diminutive. The best stallions for coach-horses are those of Naples, Denmark, Holstein, and Friesland. The stallions for saddle-horses should be * four feet

* Fourteen hands and a half.

eight or ten inches, and five feet *, at least, for coach-horses. Neither ought the colour of stallions to be overlooked, as a fine black, gray, bay, sorrel, &c. All party-coloured, or ill defined colours, ought to be banished from the stud, as well as every horse which has white extremities. Besides these external qualities, a stallion should be endowed with courage, tractability, and spirit; he should have agility, a sensible mouth, and sure limbs; his shoulders should be perfectly free, and his haunches supple; he should have a spring and elasticity in his whole body, especially in his hind legs; and he ought to be trained and dressed in the riding-school. These precautions in the choice of a stallion are the more necessary, because it has been found by experience, that he communicates to his offspring almost all his good or bad qualities, whether natural or acquired. A horse naturally cross, skittish, restive, &c. produces foals of the same dispositions: And, as the defects of conformation and the vices of the humours are more certainly perpetuated than the qualities of the temper, one should reject from the stud every horse that is deformed or diseased, extremely vicious, glandered, broken-winded, frantic, &c.

In our climate, the mare contributes less to the beauty of her offspring than the stallion; but she contributes more, perhaps, to their stature and constitution. It is, therefore, of great im-

* Fifteen hands.

portance, that mares for breed should be found, tall, large, roomy in the trunk of the body, and good nurses. For elegant horses, Spanish and Italian mares are best; but, for draught-horses, those of Britain and Normandy are preferable. However, when the stallions are good, fine horses may be produced from mares of any country, provided they be well made and of a good breed; for, if the mares have sprung from a bad stallion, their offspring are generally defective. In horses, as in the human species, the young very frequently resemble either their male or female predecessors; only, it should appear, that, among the horse-kind, the female contributes less to the work of generation than in the human species. The son more frequently resembles his mother than the foal does the mare from which he is produced; and, when the foal happens to resemble his mother, the likeness is generally confined to the anterior parts of the body, as the head and neck.

To judge of the resemblance of children to their parents, the comparison ought not to be made till after the age of puberty. For, at this period, so many changes take place, that a person, with whom we were formerly familiar, we will hardly, at first sight, be able to distinguish. In the human species, the son, after puberty, often resembles the father, and the daughter the mother, and, not unfrequently, each retains a partial likeness to both parents; and this family-

likeness

likeness is generally recognisable in uncles, aunts, and in every ascending or descending branch. Among horses, as the male contributes more to the offspring than the female, mares very frequently produce foals which have a great resemblance to the stallion, or which always resemble the father more than the mother. And, even when the mare has been begot by a bad horse, it often happens, that, though served by a good stallion, and though handsome herself, her offspring, though beautiful and well made at first, gradually decline as they grow up; and other mares, sprung from a good race, produce foals, which, though they have an unpromising aspect when young, improve as they advance in years.

These facts, though they seem to concur in proving that the males have greater influence on the offspring than the females, appear not to be sufficient to render this point altogether unquestionable. It is by no means surprising, that stallions, which are always selected from a great number, generally imported from a warm climate, and fed and managed with the greatest care and circumspection, should prevail, in the business of generation, over common mares, bred in a cold country, and often subjected to hard labour. If mares were selected from warm climates, managed with equal attention, and served with the common stallions of our own country, I have not the smallest doubt, that, in

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this case, the superiority of the females would be equally apparent as that of the males; and, in general, that, among horses, as well as the human species, the influence of both parents, when placed in equal circumstances, is nearly the same. What renders this opinion both more natural and more probable, is the well known fact, that, in studs, the number of females produced is equal to that of the males; which is a clear proof, that, with regard to sex at least, the female contributes her full proportion.

But, to return to our subject. When the stallion is chosen, and the mares are assembled, another stone-horse should be allowed to tease them, for no other purpose but to discover those which are in season. Those that are not in proper condition repel his attacks. But, instead of allowing him to proceed with the mares which are in season, he is led off, and the true stallion is substituted in his place. This trial is chiefly useful for discovering the condition of such mares as have never produced; for those which have produced are commonly in season nine days after their delivery, and may be safely covered on the tenth day. Nine days after, their condition may be tried by the above proof, and, if still in season, they should be covered a second time, and so on every ninth day, till their ardour abates, which happens a few days after conception. But, to conduct this matter properly, requires considerable attention and expence. The

stud should be established on good ground, and its dimensions proportioned to the quantity of mares and stallions employed. This ground should be divided into several apartments, and well fenced with ditches or hedges. The impregnated mares, and those which are suckling their young, should have the richest pasture. Another enclosure, where the grass is less rich, should contain the uncovered mares, those that have not conceived, and the female foals; for a rich pasture makes them grow too fat, and weakens the generative faculty. Lastly, the young male foals and geldings should be confined to the driest and most unequal part of the ground, that, by ascending and descending the eminences, they may acquire a freedom in their limbs and shoulders. This last enclosure should be well fenced from that which contains the mares, to prevent the young horses from enervating themselves by premature efforts. If the field be sufficiently extensive, each of these enclosures should be divided into two, and grazed alternately by horses and oxen. This mode of grazing improves the pasture; for the ox repairs what is injured by the horse. Each park should likewise be furnished with a pond, which is better than a running water, and also with trees to shelter the animals from too much heat; but, to prevent accidents, all old stumps should be rooted out, and deep holes filled up. These pastures will afford sufficient nourishment to the stud during

ring the summer; but, in winter, the mares and foals should be put into stables, and fed with hay, except in very fine weather, when they may be set out to pasture during the day. The stallions should be always kept in the stables, fed with a greater proportion of straw than of hay, and moderately exercised till the time of covering, which generally lasts from the beginning of April till the end of June. During this period, they should be fed plentifully, but with no other article than their ordinary food.

When the stallion is conducted to the mare, to augment his ardour, he should be well dressed. The mare should have the shoes taken off her hind feet; for some of them are apt to kick at the approach of the stallion. One man holds the mare by the head, and two others lead the stallion by long reins. When in a proper situation, he should be assisted by the hand, by turning aside the tail of the mare; for the opposition of a single hair might wound him in a dangerous manner. The stallion sometimes quits the mare without consummating. If the trunk of his tail near the crupper vibrates before he descends, we may be certain that he has consummated; for this motion always accompanies emission. After consummation, the act should not be reiterated; but he ought to be carried back immediately to the stable, there to remain two days: For, though a horse might be able to cover every day during the season; yet, if only
admitted

admitted once in two days, he is both more vigorous and more successful. During the first seven days, therefore, let him have four different mares, and, on the ninth, let him again cover the first mare, and so on as long as they continue in season. When one of the mares ceases to be ardent, another should be substituted in her place; and, as many are impregnated at the first, second, or third time, a stallion, managed in this manner, may cover 15 or 18 mares, and produce 10 or 12 foals, during the three months that these amours continue. Stallions throw out a vast profusion of seminal fluid; mares likewise emit, or rather distil, a fluid during the time they are in season; and, as soon as they are pregnant, these emissions cease. This fluid was called *Hippomanes* by the Greeks; and of it they are said to have made love-potions, which rendered horses, in particular, frantic with desire. The hippomanes is totally different from the fluid found in the membranes that cover the foal, which was first discovered and described by M. Daubenton*. The appearance of the hippomanes is the most certain mark of ardour in mares. This passion may likewise be discovered by the swelling of the under part of the vulva, and by the frequent neighing of the mares, who, at this period, have a strong desire of approaching the horse. After a mare has been covered, she may be led to the pasture

* Mem. de l'Acad. des Sciences, année 1751.

without any other precaution. The first foal is always more puny than the subsequent ones: To compensate this defect, a mare should be served, for the first time, with a large stallion. The differences in the figures of the horse and mare should be attended to, in order to correct the faults of the one by the perfections of the other; and no disproportioned conjunctions ought to be admitted, as of a small horse and a large mare, or of a large horse and a small mare; for the produce of such conjunctions will either be small or ill proportioned. In order to improve Nature, we must advance by gradual steps: A plump but handsome horse, for example, may be admitted to a mare that is too gross, a small mare to a horse a little taller, a mare with a bad fore-hand to a horse with a fine head, neck, &c.

It has been remarked, that studs kept in dry light soils produce active, nimble, and vigorous horses, with nervous limbs and strong hoofs; while those kept in moist ground, and in too rich pasturage, have generally large heavy heads, gross bodies, thick legs, bad hoofs, and broad feet. It is easy to perceive that these differences proceed from the varieties in climate and food. But the necessity of crossing the breed, to prevent the degeneration of horses, is more difficult to understand, and of more importance to be known.

There is in Nature a general prototype of every species, upon which each individual is modelled,

delled, but which seems, in its actual production, to be depraved or improved by circumstances; so that, with regard to certain qualities, there appears to be an unaccountable variation in the succession of individuals, and, at the same time, an admirable uniformity in the entire species. The first animal, the first horse, for example, has been the external and internal model, upon which all the horses that have existed, or shall exist, have been formed. But this model, of which we know only copies, has had, in communicating and multiplying its form, the power of adulterating or of improving itself. The original impression is preserved in each individual. But among millions of individuals, not one exactly resembles another, nor, of course, the model from which they sprung. This difference, which shows that Nature is not absolute, but knows how to vary her works by infinite shades, is equally conspicuous in the human species, in all animals, and in all vegetables. What is singular, this model of the beautiful and the excellent, seems to be dispersed over every region of the earth, a portion of which resides in all climates, and always degenerates, unless united with another portion brought from a distance. In order, therefore, to obtain good grain, beautiful flowers, &c. the seeds must be changed, and never sown in the same soil that produced them. In the same manner, to have fine horses, dogs, &c. the males and females of different countries

countries must have reciprocal intercourse. Without this precaution, all grain, flowers, and animals degenerate, or rather receive an impression from the climate so strong as to deform and adulterate the species. This impression remains, but it is disfigured by every feature that is not essential. By mixing races, on the contrary, or by crossing the breed of different climates, beauty of form, and every other useful quality, are brought to perfection: Nature recovers her spring, and exhibits her best productions.

I mean not to enter into a detail of the causes of these effects; but shall confine myself to such conjectures as most readily present themselves. We know by experience, that animals or vegetables, transported from distant climates, often degenerate, and sometimes come to perfection, in a few generations. This effect, it is obvious, is produced by difference of climate and of food. The operation of these two causes must, in process of time, render such animals exempt from, or susceptible of certain affections, or certain diseases. Their temperament must suffer a gradual change. Of course, their form, which partly depends on food and the qualities of the humours, must also, in the course of generations, suffer an alteration. This change, it is true, is hardly perceptible in the first generation; because the male and female, which we supposed to be the origin of this race, being fully grown, had received their form and structure before they

were

were transported. The new climate and new food may change their temperament; but cannot have influence upon the solid and organic parts sufficient to alter their form. The first generation of these animals, therefore, will not suffer any change in their figure; nor, at the instant of birth, will the stock be vitiated or depraved. But the young and tender stranger will feel a much stronger impression from the climate than its father or mother experienced. The operation of food will likewise be so great as to influence the organic parts during the time of the animal's growth: A change will, of course, be introduced into its form; the seeds of imperfection will be sown, and appear, in a sensible manner, in the second generation, which will not only labour under its own proper defects, or those proceeding from its growth and nourishment, but inherit all the vices of the second stock. Lastly, the imperfections and deformities transmitted to the third generation, being combined with the influence of the climate and food during the growth of the animal, will become so great as to obliterate entirely the characters of the original stock. Hence, in a few generations, animals transported into a climate different from their own, lose all their distinctive qualities, and acquire those peculiar to the country they are obliged to inhabit. In France, Spanish or Barbary horses, when the breed is not crossed, become French horses, sometimes in the second generation,

neration, and always in the third. Instead of preserving the breed distinct, therefore, it is necessary to cross it every generation, by admitting Spanish or Barbary horses to the mares of the country. It is singular, that this renewing of the race, which is only partial, produces better effects than if it were complete. A Spanish horse and mare will not produce such fine horses in France, as those bred from a Spanish horse and a French mare. This may easily be conceived, if we attend to the compensation of defects which necessarily happens, when males and females of different countries are allowed to intermix. Every climate, by its influence, joined to that of the food, gives a certain conformation of parts, which errs either by excess or defect. When a warm climate produces redundancies in particular parts, a cold climate gives rise to deficiencies in the same parts. Hence, when animals of opposite climates intermix, an exact compensation is effected. As the most perfect work of Nature is that in which there are fewest defects, and as the most perfect forms are those which have fewest deformities, the production of two animals, whose faults exactly compensate each other, will be the most perfect of the kind. Now, this compensation being always completest, when animals of remote, or rather of opposite climates, are joined, the compound resulting from the mixture is more or less perfect, in proportion as the excess or defects in the constitution of
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the father are opposed to those peculiar to the mother.

To have good horses, therefore, in the temperate climate of France, stallions should be brought from the warmest or the coldest countries. The Arabian or Barbary horses ought to have the preference; and, after them, those of Spain and of Naples. With regard to cold climates, the horses of Denmark should be preferred, and, next to them, those of Holstein and Friesland. All these stallions, when admitted to French mares, will produce very fine horses; and they will always be better and more beautiful, in proportion as the climate is more remote from that of France; so that the Arabian horse is preferable to the Barb, and the Barb to the Spanish. In the same manner, stallions brought from Denmark will produce finer horses than those brought from Friesland. When stallions from very warm or very cold countries cannot be procured, they should be brought from England or Germany, or even from the southern provinces of France to the northern. Some advantage is always obtained by serving mares with strange horses; for when those of the same race, and in the same stud, are allowed to intermix, they infallibly degenerate in a very short time.

The influence of climate and of food upon the human species, is not so great as upon other animals. The reason is obvious. Man defends himself better than any other animal from the
intem-

intemperance of the climate. He accommodates his lodging and clothes to the nature of the season. His food is more various, and, consequently, does not operate in the same manner upon every individual. The defects or redundancies which proceed from these two causes, and which are so constant and so perceptible in the animals, are by no means equally conspicuous in man. As migrations have often happened, as whole nations have intermixed, and as many men travel and disperse themselves through every quarter of the globe, it is not surprising that the human race are less subject to the influence of climate, and that strong, handsome, and even ingenious men, are to be found in every country. It is probable, however, that, from an experience, of which all remembrance is now lost, men had discovered the evils that result from alliances of the same blood; for even among the most unpolished nations, a brother has rarely been permitted to marry his sister. This custom, which, among Christians, is a divine law, and which is observed by other people from political motives, may have originally been founded on observation. Policy, unless when derived from physical considerations, never extends in a manner so general and so absolute. But, if men once discovered by experience that their race degenerated, when intercourse was permitted among children of the same family, they would soon regard the alliances of different families,

families, as a law established by Nature. In a word, we may presume from analogy, that, in most climates, men, like other animals, would degenerate after a certain number of generations.

The variety in the colour of animals is another effect to be ascribed to the influence of climate and food. Wild animals which live in the same climate, are of the same colour, varying only in brightness or deepness, according to the seasons of the year. Those, on the contrary, which live under different climates, differ likewise in colour; and domestic animals are so prodigiously varied, that we have horses, dogs, cats, &c. of every kind of colour. But the stag, the hare, &c. are uniformly of the same colour. The injuries received from the climate, which are always the same, and the constant eating of the same food, produce this uniformity in the wild animals. The care of man, the luxury of shelter, and the variety of nourishment, efface and variegate the original colours in domestic animals. The mixture of foreign races, especially when the males and females are not of the same colour, produce the same effect, and sometimes give rise to beautiful varieties, as the pied horses, in which the white and black are often disposed in a manner so fanciful, as to seem to be rather the operation of art than of nature.

In coupling horses, regard should be had to the stature and the colour: The figures should

be

be contrasted, and the breed crossed by stallions from the most opposite climates. Horses and mares brought up in the same stud should never be allowed to intermix. These are essential requisites. But there are other circumstances which ought not to be neglected. For example, in a stud, no mares, with short tails, should be kept; because, being unable to defend themselves from the flies, they are perpetually tormented. The continual agitation occasioned by the stinging of these insects, diminishes the quantity of milk, which has so great an influence on the constitution and stature of the foal, that its vigour is always proportioned to the goodness of its nurse. Brood-mares should be chosen from those which have been always pastured, and never fatigued with labour. Mares which have been long nourished in a stable with dry food, and afterwards turned out to grass, conceive not at first. Time is necessary to accustom them to this new kind of nourishment.

The common season of mares is from the beginning of April to the end of June; but the ardour of some not unfrequently appears at a more early period. An ardour so premature should be repressed; because the foal would be brought forth in cold weather, and, consequently, suffer both from the intemperance of the season and from bad milk. If this ardour appears not till after the month of June, it should likewise be repressed; because the foal would be produced

produced, in summer, and would not acquire strength enough to resist the rigors of winter.

Instead of conducting the stallion to the mare, it is not uncommon to allow him to go loose in the parks where the mares are feeding, and to single out such as are in season. By this method the mares conceive more readily. But it injures the stallion more in six weeks, than he would be by six years exercise, moderated and conducted in the manner above directed.

When the impregnated mares begin to grow heavy, they should be separated from those which are not in that condition, to prevent them from receiving any injury. Their period of gestation is generally eleven months and some days. They bring forth in a standing posture, while most other quadrupeds lie down. When the delivery is difficult, they require the assistance of man; and, when the foal is dead, it is extracted with cords. As in most animals, the colt first presents its head. In escaping from the uterus it breaks the membranes, and the waters flow abundantly. The waters are accompanied with several solid masses, formed by the sediment of the liquor of the allantoides. Those masses, called *bippomanes* by the ancients, are not, as they supposed, pieces of flesh attached to the head of the foal. They are, on the contrary, separated from the foal by the *amnion*. Immediately after birth, the mare licks the foal: But she never

touches the *bippomanes*, though the ancients assert that she instantly devours it.

It is usual to cover a mare nine days after she has foaled, that no time may be lost, and that every possible profit may be derived from the stud. It is certain, however, that her strength being divided, she is unable to nourish both a foal and a foetus so successfully as if she had but one at a time. To procure excellent horses, therefore, the mares should be covered but once in two years, which would make them live longer, and hold more surely; for, in ordinary studs, it is well if a half or two thirds bring forth in a year.

Mares, though impregnated, can suffer to be covered; and yet there are no instances of superfoetation. In general, they are capable of producing to the age of 14 or 15 years, and the most vigorous produce not after 18. Stallions, when properly managed, retain their prolific powers to the age of 20 years, and sometimes longer: and, as in man, those which begin too early are soonest extinguished; for the large horses, which come sooner to maturity than fine ones, and are employed as stallions at the age of four years, are commonly useless at 15.

The life of horses, as in every other species of animals, is proportioned to the time of their growth. Man, who grows 14 years, can live six or seven times as long, i. e. 90 or 100. The horse whose growth is accomplished in four

years,

years, can live six or seven times as much, i. e. 25 or 30. The exceptions to this rule are so few, that no conclusions can be drawn from them: And, as large horses come sooner to maturity than the delicate ones, their lives are likewise shorter, and they are superannuated in 15 years.

In horses, and most other quadrupeds, the growth of the posterior parts seems at first to be greater than that of the anterior. But, in man, the growth of the inferior parts is at first less than that of the superior: For the thighs and legs of infants are, in proportion to their bodies, much less than those of adults. The hind legs of the foal, on the contrary, are so long that they can reach his head, which is by no means the case after he acquires his full growth. But this difference proceeds not so much from the inequality in the total growth of the anterior and posterior parts, as from the unequal lengths of the fore and hind feet, which uniformly holds through all Nature, and is most remarkable in quadrupeds. Man's feet are larger, and likewise sooner formed, than his hands. The greatest part of the horse's hind-leg is only a foot, being composed of bones corresponding to the tarsus, metatarsus, &c. It is not, therefore, surprising, that this foot should be sooner expanded than the fore-leg, the inferior part of which represents the hand, being composed of the bones of the carpus, metacarpus, &c. This difference

is easily perceived immediately after a foal is brought forth. The fore-legs, when compared with the hind ones, are proportionably much shorter than they are to be afterwards. Besides, the thickness which the body acquires, though independent of the proportional growth in length, increases the distance between the hind-feet and the head, and, consequently, prevents the animal, when full grown, from reaching the head.

In all animals, each species varies according to the climate; and the general results of these varieties constitute different races. Of these we can only distinguish the most remarkable, or those that sensibly differ from each other, passing over the intermediate shades, which here, as in all the operations of Nature, are infinite. We have even augmented their number and confusion by cherishing the mixture of races. If the expression may be used, we have dealt roughly with Nature, by bringing into our climates the horses of Asia and of Africa. By introducing into France the horses of every country, the primitive race cannot now be recognised; so that, to distinguish horses, there remains only a few slight characters produced by the actual influence of the climate. These characters would be still better marked, and the differences more sensible, if the races of each climate were preserved without mixture. These small varieties would be more apparent and less numerous;

but

but there would be a certain number of great varieties, which every man could distinguish with ease. Instead of which, habit, and even long experience, are necessary to enable us to know the horses of different countries. On this subject we have no light but what is derived from the books of travellers, the works of Newcastle, Garfaut, Guerinere, &c. and some remarks communicated to us by M. de Fignerolles, master of horse to the King of France, and president of the academy of Angers.

The Arabian horses are the most beautiful. They are larger, more fleshy, and handsomer than the Barbs. But, as they are seldom brought into France, few observations have been made with regard to their perfections or defects.

Barbary horses are more common. They have a long fine neck, not overcharged with hair, and well divided from the withers. The head is small and beautiful. The ears are handsome and properly placed, the shoulders are light and flat. The withers are thin and well raised. The back is straight and short. The flank and sides are round, and the belly not too large. The haunch-bones are properly concealed; the crupper is somewhat long, and the tail placed rather high. The thigh is well formed, and rarely flat. The limbs are fine, handsome, and not hairy. The tendon is prominent, and the foot well made; but the pastern is often long. They are of all colours, but generally grayish. In their

movements, they are apt to be careless, and require to be checked. They are swift, nervous, light, and make extremely fine hunters. These horses appear to be the most proper for improving the breed. Their stature, however, is not so large as could be wished. They are seldom above four feet eight inches, and never exceed four feet nine *. It is confirmed by repeated experience, that, in France, England, &c. they produce foals which grow larger than their parents. Of the Barbary horses, those of the kingdom of Morocco are said to be the best, and next to these are the Barbs from the mountains. The horses of Mauritania are of an inferior quality, as well as those of Turkey, Persia, and Armenia. All the horses of warm climates have smoother and shorter hair than those of other countries. The Turkish horses are not so well proportioned as the Barbs. Their necks are generally slender, their bodies long, and their legs too thin. They are however excellent travellers, and have a long wind. It will not be thought surprising, that the bones of animals are harder in warm than in cold climates. It is for this reason that, though they have thinner shank bones than the horses of this country, their limbs are stronger.

The Spanish horses, which hold the second rank after the Barbs, have a long, thick, hairy neck. The head is rather gross and fleshy. The ears are

* Fourteen hands and a half.

long,

long, but well situated. The eyes are full of fire, and their air is bold and noble. The shoulders are thick, and the chest broad. The reins are often a little low, the sides round, and the belly frequently too big. The crupper is generally round and large, though in some it is rather long. The limbs are fine and not hairy; the tendons of the legs are prominent; the pastern is sometimes too long, like that of the Barb; the foot is rather long, like that of the mule; and the heel is often too high. The Spanish horses of the best race are thick, plump, and of a low stature. Their movements are likewise quick and supple; and they are remarkable for spirit and boldness. Their colour is commonly black, or a dark chestnut, though they are to be found of all colours. Their noses and limbs are seldom white. These marks are disliked by the Spaniards, who never breed from those which have such characters. Their favourite mark is a star in the fore-head; and they esteem a horse without a single spot, as much as we despise him. Both of these prejudices, though opposite to each other, are perhaps equally ill founded; for we find excellent horses with all kinds of marks, or with no marks whatever. These little differences in the coats of horses seem to have no dependence on their dispositions or internal constitution, but take their rise from external circumstances*; for a slight wound

* This is, perhaps, not altogether true; for it is generally remarked,

wound on the skin produces a white spot. Belfides, Spanish horses, of whatever kind, are all marked in the thigh, with the signature of the stud from which they were taken. They are generally of a small stature, though some of them are four feet nine or ten inches*. Those of Upper Andalusia, are said to be the best, though their heads be often too long. But their other rare and excellent qualities make this fault insignificant. They are obedient, courageous, graceful, spirited, and more docile than the Barbs. For these talents they are preferred to all the horses of the world, for the purposes of war, of pomp, or of the menage.

The finest English horses, in their conformation, resemble those of Arabia and Barbary, from which they originally sprung. Their heads, however, are too large, though handsome; and their ears are too long, but well situated. By the ears alone, an English horse may be distinguished from a Barb. But the great difference lies in their stature; for the English horses are much larger and plumper, being commonly four feet ten, and even five feet high†. They are of all colours, and distinguished by every sort of

remarked, that white or light coloured animals are not so strong and hardy as those of darker colours. It is found by experience, that those legs of horses which have much white upon them, are aptest to swell and turn greasy; and the white spots occasioned by wounds seem to indicate a particular weakness in the parts.

* Fourteen hands and a half.

† 15 hands high.

mark.

mark. They are generally strong, vigorous, hardy, capable of enduring much fatigue, and excellent either for hunting or the course. But they want grace and docility; they are stiff, and have little play in their shoulders.

The English race-horses are extremely fleet, and are managed with great dexterity by their riders. I cannot give a better example than by relating the substance of a letter I received from a respectable nobleman*, dated *London, Feb. 18, 1748*. Mr. Thornhill, post-master of Stilton, laid a bet, that he would ride three times the road from Stilton to London, or 215 English miles, in 15 hours. He set out from Stilton on the 29th day of April 1745, and, after mounting eight different horses on the road, arrived at London in three hours fifty-one minutes. He instantly set off from London, and, having mounted only six horses, he reached Stilton in three hours fifty-two minutes. For the third course, he used seven of the same horses, and finished it in three hours forty-nine minutes. So that he not only gained his bet, but, instead of fifteen hours, he had performed what he had undertaken in eleven hours thirty-two minutes. I suspect that no example of such fleetness was ever exhibited at the Olympic games.

The Italian horses were formerly much handsomer than they are now; because, for some time past, the breed has been neglected. However, the Neapolitan horses are still excellent for

* The Earl of Morton.

carriages.

carriages. But, in general, they have large heads and thick necks; they are also untractable, and, of course, not easily managed. These defects are compensated by the stateliness of their form, by their high spirit, and by the gracefulness of their motions.

The Danish horses, both on account of size and beauty, are preferred to all others for carriages. Some of them are perfect models; but their number is small: For most of them are not very regularly formed, having thick necks, gross shoulders, backs too long and too low, and cruppers too narrow in proportion to the thickness of their fore parts. But they are all graceful in their movements; and, in general, they are excellent for war and for pomp. They are of all colours; and the tiger-spotted horses are peculiar to Denmark.

Germany produces very fine horses: But, though generally bred from Barbary, Turkish, Spanish, and Italian horses, most of them are heavy and short-winded; and therefore ill qualified for hunting or coursing. The horses of Hungary and Transylvania, on the contrary, are light and nimble. To prevent their neighing in time of war, and also, it is said, to improve their wind, the Hungarians slit the nostrils of their horses. I have never had an opportunity of ascertaining the fact, that horses, whose nostrils are slit, lose the power of neighing. But I should rather imagine, that this operation only

renders their neighing more feeble. It is remarked of the Hungarian, Croatian, and Polish horses, that they are noted for retaining what is called the *mark* in their teeth till they be very old.

The Dutch horses answer very well for drawing coaches, and are commonly used in France for that purpose. The best kind are brought from the province of Friesland: Those of Bergue and Juliers are also very good. The Flemish horses are much inferior to the Dutch. Almost the whole of them have large heads, and broad feet; and their legs are subject to humours. These two last faults render them very unfit for carriages.

In France, there are horses of all kinds; but few of them are handsome. The best saddle-horses are brought from the Limosin. They resemble the Barbs, and are excellent for the chase. But they grow very slowly, require much care when young, and must not be used till they arrive at the age of eight years. There are likewise good ponies in Auvergne, Poitou, and Burgundy. But next to the Limosin, Normandy furnishes the finest horses. They are not so good for the chase; but they make better war-horses. They are plump, and soon acquire their full growth. Good coach-horses, lighter and more alert than those of Holland, are bred in Lower Normandy and Cotentin. Franche-Comté and the Bouloannois furnish us with

with very good draught-horses. In general, the French horses have their shoulders too wide, while those of the Barb are too narrow.

Having described those horses with which we are best acquainted, we shall now give the relations of travellers concerning foreign horses, of which we have little knowledge. There are good horses in all the islands of the Archipelago. Among the ancients, the horses of Crete were in high estimation for agility and swiftness*. However, horses are now little used in that island, on account of the ruggedness of the country, which is every where mountainous and full of inequalities. The best horses in these islands, and even in Barbary, are of the Arabian race. The native horses of the kingdom of Morocco are much smaller than those of Arabia, but very nimble and vigorous†. Mr. Shaw alleges‡, that the breed of Egypt and of Tingitania is superior to those of the neighbouring countries; and yet, more than a century ago, excellent horses were found throughout all Barbary: These Barbary horses, he says, never stumble; and they stand still when the rider dismounts, or drops the bridle. They walk very fast, and gallop with great rapidity; but they are never allowed to trot or amble, these movements being considered by the natives as rude

* Descrip. des Isles de l'Archipel. par Dapper, p. 462.

† L'Afrique de Marmol, tom. ii. p. 124.

‡ See Shaw's Travels.

and

and vulgar. He adds, that the Egyptian horses are superior to all others both in stature and in beauty. But these Egyptian, as well as most of the horses of Barbary, sprung originally from the Arabians, which are unquestionably the handsomest horses in the world.

According to Marmol*, or rather Leo Africanus†, whom Marmol has copied almost verbatim, the Arabian horses are descended from the wild horses in the deserts of Arabia, of which studs were formed very anciently, and which multiplied so greatly, as to spread over all Asia and Africa. They are so swift as to out-run the ostrich. The Arabs of the desert and the people of Lybia rear numbers of these horses for the chase. They never use them either in war, or for travelling. They pasture them as long as the grass remains, and, when it fails, they feed them with dates and camel's milk, which make them nervous, light, and meagre. They catch the wild horses in snares, and, when young, they eat their flesh, which they esteem as very delicate food. These wild horses are small, and commonly of an ash-colour, though some of them are white; and the hair of the mane and tail is short and crisped. Curious relations, concerning the Arabian horses, are given by other travellers‡, of which I shall only mention some of the principal facts.

* L'Afrique de Marmol, tom. i. p. 50.

† Leo Afric. de Africa Descript. tom. ii. p. 750.

‡ Voyage de M. de la Roque, p. 194. et l'Hist. Generale des Voyages, tom. ii. p. 626.

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There is not an Arabian, however poor, who has not his horses. The Arabs generally ride upon mares, having learned from experience, that mares endure fatigue, hunger, and thirst, better than horses. These mares are so gentle, that, though numbers of them are often left together for whole days, they never strike or do each other the smallest injury. The Turks, on the contrary, are not fond of mares; but they purchase from the Arabs those horses which they intend not to use as stallions. The Arabs preserve with great care, and for an amazing length of time, the races of their horses. They know all their alliances and genealogies^{*}; and they distinguish

* The translator here presents the reader with an original attestation, some of which, M. D'Arvieux says, have been preserved for above 500 years in the public records.

Taken before **ABDOURAMAN, KADI OF ACCA.**

The occasion of this present writing or instrument is, that, at **ACCA**, in the house of Badi, legal established judge, appeared in Court Thomas Uligate the English consul, and with him Sheikh Morad Ebn al Hajj Abdollah, Sheikh of the county of Safed; and the said consul desired, from the aforesaid Sheikh, proof of the race of the gray horse which he bought of him, and he affirmed to be Monaki Shadahi †; but he was not satisfied with this, but desired the testimony of the Arabs who bred the horse, and knew how he came to Sheikh Morad; whereupon there appeared certain Arabs of repute, whose names are undermentioned, who testified and declared, that the gray horse which the consul formerly bought of Sheikh Morad, is Monaki Shadahi, of

† These are the names of the two breeds of Arab horses, which are reckoned pure and true, and those which are of both these breeds by father and mother, are the most noble and free from blemish.

tinguish their races into three different classes. The first, which are of a pure and ancient race on both sides, they call nobles; the second are likewise of an ancient race, but have been degraded by vulgar alliances; and the third class consists of their common horses. The latter sell at a low price. But those of the first class, and even of the second, among which some individuals are not inferior to the nobles, are exceedingly dear. Mares of the noble class are never permitted to be covered but by horses of the same quality. The Arabs, by long experience, know all the races of their horses, as well as those of their neighbours. They know their

of the pure race of horses, purer than milk †; and that the beginning of the affair was, that Sheikh Saleh, Sheikh of Ailabai, bought him of the Arabs, of the tribe of al Mohamadat, and Sheikh Saleh sold him to Sheikh Morad Ebn al Hajj Abdollah, Sheikh of Safed, and Sheikh Morad sold him to the consul aforesaid; when these matters appeared to us, and the contents were known, the said gentleman desired a certificate thereof, and testimony of the witnesses, whereupon we wrote him this certificate, for him to keep as a proof thereof. Dated Friday 18 of the latter Rabi in the year 1235.

Witnesses,

Sheikh Tumat al Faliha of the Arabs
of al Mohamadat.

Ali Ebn Tahir al Kaabi,

Arabian his Brother.

Mohammed al Adhra Sheikh Alfarifat.
Khamis al Kaabi.

† A proverbial expression.

PERRANT'S ZOOLOGY.

names,

names, surnames, colours, peculiar marks, &c. When a family have no noble stallions, they borrow one of a neighbour to cover their mares, which is performed in presence of witnesses, who give an attestation of it, signed and sealed, before the secretary of the Emir, or some other public person. This attestation contains the names of the horse and mare, and a complete history of their pedigrees. When the mare has foaled, witnesses are again called, and another attestation is made, including a description of the foal, and the day of its birth. These attestations enhance the value of their horses, and they are always delivered to the purchasers. The smallest mares of this first class are worth 500 crowns; and many of them sell at 1000 crowns; and even higher prices are sometimes given. As the Arabs live in tents, these tents serve them likewise for stables. The mare and her foal, the husband and his wife and children, sleep together promiscuously. The infants often lie on the body, or on the neck of the mare or foal, without receiving any injury from these animals, which seem afraid to move, lest they should hurt the children. These mares are so accustomed to society, that they submit to every kind of familiarity. The Arabs never beat their mares; but treat them gently, and talk and reason with them. They are so careful of them as to allow them always to walk, and never spur them, unless the occasion be very urgent. Hence, when-

ever

ever the creatures perceive the rider's heel make an approach to their sides, they instantly set off with incredible swiftness, and leap hedges and ditches as nimbly as flags. If their rider chances to fall, they are so well trained, that they stop short, even in the most rapid gallop. All the Arabian horses are of a middle stature, very easy in their carriage, and rather meagre than fat. They are dressed every morning and evening with so much care, that not a spot of dirt is left on their skin, and their legs, mane, and tail, are washed. Their tails are allowed to grow long; and the comb is seldom used, to prevent the hair from being broken. During the day, they are not permitted to eat; but are watered twice or thrice. At sun-set, a bag, containing about half a bushel of barley, is passed over their heads, and fastened to the neck. This bag is not removed till next morning, when the barley is entirely consumed. In the month of March, when the grass is good, they are turned out to pasture. This is also the season in which the mares are covered; and, on these occasions, water is employed in the same manner as in other countries. After the spring is past, the horses are taken from the pasture; and, during the rest of the year, they are allowed neither grass nor hay, and rarely straw, barley being their only food. At the age of a year or ten months, the Arabians cut the manes of their foals, with a view to make them grow long and bushy.

bushy. When two years, or two years and a half old, they are mounted, having never, before that period, been either saddled or bridled. Every day, from morning to night, all the Arabian horses stand saddled at the tent-doors.

This race of horses is spread over all Barbary; and the great men among the Moors, and even among the Negroes along the rivers Gambia and Senegal, have Arabian horses of great beauty. Instead of barley or oats, they are fed with maize, reduced to a powder, which is mixed with milk, when they require to be fattened. In this warm climate, they are allowed little water*. On the other hand, the Arabian horses are dispersed over Egypt, Turkey, and perhaps Persia, where very considerable studs were formerly kept. Marc Paul† mentions one of these studs which contained ten thousand white mares; and he says, that, in the province of Balascia, there is a vast number of large nimble horses, with hoofs so hard as to require no shoes.

The Levant horses, like those of Persia and Arabia, have very hard hoofs: They are shod, however, but with shoes extremely light and thin. In Turkey, Persia, and Arabia, the same manner of feeding and dressing horses is observed. Their litter is made of their own dung, which is first dried in the sun, to remove

* L'Hist. Generale des Voyages, tom. iii. p. 297.

† La Descript. Geog. de l'Inde, par Marc Paul, tom. i. p. 41. et liv. i. p. 21.

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the disagreeable smell, and then reduced to a powder. Of this a bed is laid in the stable or tent, about four or five inches thick. This litter lasts very long; for, after being soiled, it is dried a second time in the sun, which clears it entirely from its offensive odour.

In Turkey there are Arabian, Tartarian, and Hungarian horses, beside the native horses of that country, which last are exceedingly handsome*, swift, and spirited. But they are delicate, and soon fatigued. They eat little, are easily heated, and their skin is so sensible, that they are unable to bear the friction of a comb; instead of which, they are brushed, and washed with water. These horses, though beautiful, are inferior to the Arabians, and even to those of Persia; the latter, next to the Arabians†, being the handfomest and best horses of the East. The pasture in the plains of Media, of Persepolis, of Ardebil, and of Derbent, is extremely fine; and a prodigious quantity of horses, most of which are beautiful and excellent, are raised there by order of government. Pietro della Valle‡ prefers the common horses of Persia to the finest Neapolitan horses. They are generally of a middle stature||; and some of them are very small,

* Le Voyage de M. Dumont, tom. iii. p. 253.

† Les Voyages de Thevenot, tom. ii. p. 220; de Chardin, tom. ii. p. 25; d'Adam Olearius, tom. i. p. 560.

‡ Les Voyages de Pietro della Valle, tom. v. p. 284.

|| Voyages de Tavernier, tom. ii. p. 19.

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but strong and active*; while others exceed the size of the English saddle-horses†. They have light heads and fine necks. Their ears are handsome and well situated. They have slender legs, fine cruppers, and hard hoofs. They are docile, spirited, bold, and capable of enduring great fatigue. They are extremely swift, and never stumble. They are robust, and so easily nourished, that their only food is barley mixed with cut straw; and they are grazed during six weeks of the spring only. Their tails are allowed to grow long; and they are never gelded. Coverings are used to defend them from the injuries of the weather. Peculiar care and attention are bestowed upon them; and they are managed by a simple bridle, without employing the spur. Great numbers of them are transported to Turkey and the Indies. Those travellers, who bestow so much praise upon the Persian horses, allow, however, that the Arabians are superior in agility, courage, strength, and beauty; and that they are more valued, even in Persia, than the horses of that country.

The horses which are bred in the Indies are very indifferent‡. Those used by the great men of the country are brought from Persia and

* Les Voyages de Thevenot, tom. ii. p. 220.

† Les Voyages de Chardin, tom. ii. p. 25.

‡ Le Voyage de la Boulaye-le-Gouz, p. 256 et Recueil des Voyages qui ont servi à l'Etablissement de la Compagnie des Indes, tom. iv. p. 424.

Arabia. They are fed with hay during the day; and, at night, in place of barley and oats, they get pease boiled with sugar and butter. This nourishing diet supports them, and gives them some degree of strength; without it, they would soon perish, the climate not being adapted to their constitution. The native horses of India are very small. Some of them are so exceedingly diminutive, that Tavernier informs us, the young Prince of Mogul, aged about seven or eight years, generally rode on a handsome little creature, whose stature exceeded not that of a large greyhound*. Very warm climates, it would appear, are destructive to horses. Those of the Gold Coast, or Juifs, of Guiney, &c. are likewise extremely bad. They carry their head and neck very low. Their movements are so feeble and tottering, that one is apt to imagine they are always ready to fall. If not continually beat, they would not stir a limb; and the greatest part of them are so short, that the feet of the rider almost touch the ground†. They are, besides, very untractable, and fit only to be eaten by the Negroes, who are equally fond of horses flesh as that of dogs‡. This appetite for horses flesh is common to the Negroes and Arabians, and discovers itself in Tartary, and even

* Les Voyages de Tavernier, tom. iii. p. 334.

† Hill. Generale des Voyages, tom. iii. p. 228.

‡ Idem, tom. iv. p. 353.

in China*. The Chinese horses are as bad as those of India, being feeble, sluggish, ill made, and very small†: Those of Corea exceed not three feet in height‡. Almost all the horses of China are gelded; and they are so timid, that they cannot be used in war. It may, indeed, be affirmed, that the Tartarian horses made the conquest of China. The horses of Tartary are very proper for the purposes of war. Though not of the largest size, they are strong, vigorous, bold, fiery, and extremely swift. Their hoofs are hard, but too narrow; their heads are light, but too small; their necks are long and stiff; and their limbs are too long. Notwithstanding these faults, they may be regarded as good horses; for they are indefatigable, and run with amazing rapidity. The Tartars, like the Arabians, live with their horses. At the age of seven or eight months, they are mounted by children, who walk and gallop them by turns. In this manner they are gradually trained; and they are accustomed to suffer long abstinence. But they are not mounted for hunting or travelling, till they arrive at six or seven years of age, when they are

* Le Voyage de M. le Gentil, tom. ii. p. 24.

† Les Anciennes Relations des Indes, & de la Chine, traduites de l'Arabe, p. 204. L'Hist. Gen. des Voyages, tom. vi. p. 427. 535. L'Histoire de la Conquête de la Chine, par Palasor, p. 426.

‡ Nine hands,

obliged

obliged to undergo the most incredible fatigues*; as walking two or three days without stopping; receiving, for four or five days together, only a handful of herbage every eight hours; and, at the same time, they are kept from drinking for 24 hours, &c. These horses, which are so robust in their own country, become feeble and useless when transported to China or the Indies: But they thrive very well in Persia and Turkey. In Little Tartary, there is a race of small horses, of which the natives are so fond, that they never permit these horses to be sold to strangers. They possess all the good and bad qualities peculiar to the horses of Great Tartary; which shows, that the influence of the same manners and education create, in these animals, the same dispositions and temperament. In Circassia and Mingrelia, there are many horses still handsomer than those of Tartary. Fine horses are also to be found in the Ukraine, in Walachia, in Poland, and in Sweden. But we have no particular information concerning their excellencies or defects.

If we consult the ancients as to the qualities of horses in different countries, we shall find †, that the Greek horses, and especially those of Thessaly and Epirus, were in high estimation, and were excellent for the purposes of war;

* Palafox, p. 427. Le Recueil des Voyages de Nord, tom. iii. p. 156. Tavernier, tom. i. p. 472. L'Hist. Gen. des Voyag. tom. vi. p. 603. et tom. vii. p. 214.

† Aldrovand. Hist. Nat. de Soliped. p. 48. &c.

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that those of Achaia were the largest then known; that the handsomest came from Egypt, where they were very numerous, and where Solomon sent to purchase them at a very high price; that, in Ethiopia, on account of the great heat of the climate, the horses did not thrive; that Arabia and Africa furnished the handsomest, lightest, and best horses, either for travelling or for the course; that those of Italy, and particularly of Apulia, were likewise very good; that Sicily, Cappadocia, Syria, Armenia, Media, and Persia, produced excellent horses, which were remarkable for lightness and fleetness; that those of Sardinia and Corsica were small, but bold and vivacious; that the horses of Spain resembled those of Parthia, and excelled in war; that, in Transylvania and Walachia, there were swift horses, with light heads, long manes which hang down to the ground, and bushy tails; that the Danish horses were handsome, and fine leapers; that those of Scandinavia were small, but well-formed, and very agile; that the horses of Flanders were remarkable for strength; that the Gauls furnished the Romans with good horses for the purposes of riding and carrying burthens; that the German horses were ill-formed, and so vicious, that no use was made of them; that the horses of Switzerland were numerous, and useful in war; that those of Hungary were also very good; and, lastly, that the Indian horses were small and very feeble.

From

From all these facts, it is apparent, that the Arabian horses have always been, and still are, the best horses of the world, both for beauty and goodness; that from them, either directly, or by the mediation of the Barbs, are derived the finest horses in Europe, in Africa, and in Asia; that Arabia is, perhaps, not only the original climate of horses, but the best suited to their constitution; since, instead of crossing the breed by foreign horses, the natives anxiously preserve the purity of their own race; that, at least, if Arabia be not the best climate for horses, the Arabs have produced the same effect, by the scrupulous and perpetual attention they have paid towards ennobling the race, and never permitting individuals to mix which were not the most handsome, and of the finest quality; and that, by the same attention, continued for ages, they have improved the species far beyond what Nature would have performed in the most favourable climate. It may still farther be concluded, that climates rather warm than cold, and above all, dry countries, are best adapted to the nature of horses; that, in general, the small are better than the large horses; that care is equally necessary to them as food; that, by familiarity and caresses, we procure more advantage from them, than by force and chastisement; that the horses of warm countries have their bones, hoofs, and muscles, more firm and compact than those of our climates; that, though heat is more con-

formable

formable to the nature of these animals than cold, yet excessive heat is exceedingly hurtful to them; that excessive cold is not less injurious; and, in fine, that their constitution and dispositions depend almost entirely upon climate, food, care, and education.

The practice of gelding horses, so generally diffused over Europe and China, is unknown in Persia, Arabia, and many other parts of the east. This operation greatly diminishes their strength, courage, sprightliness, &c.; but it endows them with gentleness, tranquillity, and docility. In performing it, the animal is thrown on his back, by means of ropes fixed to his legs; the scrotum is opened with a sharp knife; and the testes, with their vessels, and the ligaments which support them, are removed. The wound is then closed up; and the patient is bathed twice a day with cold water. His food, during this period, consists of bran drenched in water, with a view to cool him. The operation should be performed in spring or autumn, much heat or much cold being equally dangerous. With regard to the age at which it should be executed, the practice differs in different places. In certain provinces of France, horses are gelded at the age of a year or eighteen months, or as soon as the testes are very apparent without the body. But the most general and most rational custom is to delay the operation till the age of two or three years; because when protracted this long, the animal

animal retains more of the qualities peculiar to the male sex. Pliny says, that, if a horse be gelded before he loses his milk-teeth, they never shed. But I know, from repeated observation, that this remark is false. The ancients, it is probable, were led into this error, by an analogy drawn from the stag, roe-buck, &c.; for the horns of these animals never fall off after castration. Geldings lose the power of impregnating; but there are many examples of their being still able to copulate.

Horses of all colours, like most animals covered with hair, moult or cast their hair every year, commonly in the spring, and sometimes in autumn. As they are then weaker than at any other period, they require more care, and should be more plentifully fed. Some horses likewise cast their hoofs, especially in moist and marshy countries, as in Holland*.

Mares and geldings neigh less frequently than perfect horses. Their voices are also neither so full nor so deep. In horses of every kind, five different species of neighing, expressive of different passions, may be distinguished. In the neigh proceeding from joy, the voice is long protracted, and begins and terminates with sharp sounds: The horse, at the same time, flings, but without any inclination to strike. In the

* If this assertion be true, the casting of the hoofs must proceed from some morbid cause; for no horses cast their hoofs, unless when diseased.

neigh of desire, whether from love or friendship, the horse does not fling, the voice is long continued, and finishes with graver sounds. The neigh of anger, during which the animal flings and strikes with fury, is very short and sharp. The neigh of fear, during which he also flings, is not longer than that of anger; the voice is grave and hoarse, and seems as if it proceeded entirely from the nostrils. This neigh resembles the roaring of a lion. The noise expressive of pain is not so much a neigh, as a groan or snorting uttered with a grave voice, and following the alternate motions of respiration. It has likewise been remarked, that horses which neigh most frequently from motives of joy or desire, are the best and most generous. The voice of unamutilated horses is stronger than that of geldings or mares. The female voice, even from the moment of birth, is weaker than that of the male. At two years, or two and a half, which is the age of puberty, the voice both of males and females, as in man and other animals, becomes stronger and more grave.

When the horse is fired with love, he shows his teeth, and has the appearance of laughing. He likewise shows them when angry and inclined to bite. He sometimes thrusts out his tongue to lick, but less frequently than the ox, though the latter is less sensible of caresses. The horse remembers injuries much longer than the ox, and is also more easily dispirited. His nat-

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tural disposition, which is bold and impetuous, makes him exert his whole force at once; and, when he perceives that still more is requisite, he grows indignant, and obstinately refuses to act. But the ox, who is naturally slow and slothful, seldom employs his whole strength, and is not so easily disheartened.

The horse sleeps much less than man. When in good health, he never lies above two or three hours at a time. He then rises to eat. After being much fatigued, and after filling his belly, he lies down a second time. But, upon the whole, he sleeps not above three or four hours in the twenty-four. There are also some horses which never lie down, but sleep standing; and even those which are accustomed to lie down, sometimes sleep on their feet. It has been remarked, that geldings sleep oftener and longer than perfect horses.

All quadrupeds drink not in the same manner, though all are under an equal necessity of exploring with the head that liquor which they have no other method of apprehending, except the monkey, and some other animals that have hands, and can drink like man, when a proper vessel is presented to them; for they carry it to their mouth, pour out the liquor, and swallow it by the simple movement of deglutition. This is the ordinary way in which man drinks, because it is the most commodious. But he can vary his method of drinking, by contracting the

the lips, and sucking the fluid, or rather by sinking both mouth and nose into it, and then performing the motions necessary to swallowing. He can even seize a fluid by the simple motion of his lips; or, lastly, he can stretch out and expand his tongue, make a kind of little cup of it, and in this manner, though with some difficulty, satisfy his thirst. Most quadrupeds might also drink in different ways: But, like man, they follow that which is most convenient. The dog, whose mouth opens wide, and whose tongue is long and slender, drinks by lapping, or licking, with his tongue, which he forms into a kind of cup or scoop, fills at each time, and thus carries a sufficient quantity of fluid into his mouth. This method he prefers to that of dipping his nose into the water. The horse, on the contrary, whose mouth is too small, and whose tongue is too thick and too short, for forming a scoop, and who, besides, drinks with more avidity than he eats, briskly sinks his mouth and nose deep into the water, which he swallows plentifully by the simple motion of deglutition*. But this obliges him to drink without drawing his breath; while the dog respire at his nose during the time he is drinking. After running, when the respiration is short and laborious, horses should

* This is not always the case; for many horses touch only the surface of the water with their lips, and suck it gently in; and even those which dip their noses deeper, never sink the nostrils under the water, but breathe freely through them when drinking.

be allowed to drink at leisure, and to breathe as often as they incline. Neither should they be permitted to drink water that is too cold; for, independent of the colics frequently occasioned by very cold water, it often cools their nose to such a degree, as brings on rheums, and perhaps lays the foundation of the disease called *glanders*, the most obstinate of all maladies to which this noble animal is subject. It has lately been discovered, that this disease is seated in the pituitary membrane*, and that it is a genuine rheum, which in time produces an inflammation in that membrane. Besides, those travellers who give a detail of the diseases of horses in warm countries, alledge not that the glanders is equally frequent in Arabia, Persia, and Barbary, as in cold climates. Hence I am led to conjecture, that this malady is owing to the superior coldness of the water; because these animals are obliged to keep their noses in the water a considerable time, which might be prevented by never allowing them to drink very cold water, and by always drying their nostrils after drinking. Asses, which dread cold more than horses, and resemble them so greatly in their internal structure, are not equally subject to the glanders, which is owing, perhaps, to their drinking in a different manner from the horse; for, instead of sinking the nose into the water, they barely touch it with their lips.

* M. de la Fosse, farrier to the King, first demonstrated this fact; and he has attempted to cure horses by the trepan.

I shall mention no more of the diseases of horses. It would extend Natural History beyond all bounds, if, to the history of each animal, we were to join that of its diseases. However, I cannot finish the history of the horse, without regretting that the health of this useful and valuable animal should be still abandoned to the blind care, and often absurd and cruel practice, of a set of men who have neither understanding nor letters. Of the art, called by the ancients *Medicina Veterinaria*, we now hardly know more than the name. If any physician would turn his views to this subject, and make it a principal object of his inquiry, I am convinced that he would be amply rewarded for his trouble; and that he would not only acquire a fortune, but obtain the highest reputation. This species of the medical art would by no means be conjectural, or so difficult as the other. The manners, the food, the influence of sentiment, and all the other causes of disorders, being less complicated in these animals than in man, their diseases must also be more simple, and, of course, more easily investigated and treated with success. To these advantages may be added the perfect liberty of making experiments, of trying new remedies, and of arriving, without fear or reproach, to a most extensive knowledge of this kind, from which, by analogy, deductions might be drawn of the greatest utility to the art of curing men.

S U P P L E M E N T.

WE have already described the manner in which the horses of Arabia are treated, and given a detail of the pains and attention bestowed on their education. This dry and warm country, which appears to be the original climate of the horse, and most conformable to his nature, permits or requires a number of usages that cannot be practised, with equal effect, in any other region. In France, and other northern nations, it is impracticable to train and feed horses in the same way as in warm climates. But men, who are interested in these useful creatures, will not be displeased to learn how they are managed in countries less favoured by Heaven than Arabia, and how they conduct themselves, when they act independent of the human species, and when left entirely to their own dispositions and instincts.

Horses are differently fed, according to the different countries to which they are transported, and the uses to which they are destined. The horses of Arabia or Barbary, which are destined for hunting, seldom eat herbage or grain. Their common food, which consists of dates and camels milk, is given them every morn-

ing and evening. These aliments, instead of fattening the horses, render them meagre, nervous, and very fleet. They spontaneously suck the she-camels, whom they follow * till the time they are ready for mounting, which is not before the age of six or seven years.

In Persia, the horses are exposed night and day to the open air. But, to protect them from the injuries of the weather, from damp vapours, and from rain, they are covered, especially in winter, with cloths; and sometimes an additional covering is added, which is made of hair, and very thick. A spot of dry level ground is prepared for them, which is greater or smaller according to their number, and kept extremely clean. Here they are all tied to a long rope, which is well stretched, and firmly fixed at each end to two iron rods stuck in the earth. Their halters, however, are sufficiently free to allow them to move with ease. To prevent them from hurting each other, their hind-legs are tied with a rope, which has iron buckles at each extremity; these are brought about to the fore part of the horses, and fastened to the ground by pegs, but loose enough to allow them to lie down or to rise at their pleasure. When put into stables, they are managed in the same manner. Xenophon informs us, that this practice was observed in his days; and it is alledged, that, by this means, the animals are rendered

* Voyage de Marmol, tom. i. p. 50. more

more gentle and tractable, and less peevish among themselves; qualities extremely useful in war, when vicious horses, tied up in squadrons, often injure one another. For litter, the Persians use only sand or dry dust, upon which their horses lie down and sleep as well as if it were straw *. In other countries, as Arabia and the Mogul empire, the horses are littered with their own dung, well dried and reduced to a powder †. The eastern horses are never allowed to eat from the ground, or even from a rack; but are served with barley and cut straw in pocks tied to their heads; for in these climates no hay is made, nor do the natives cultivate oats. In spring, the horses are fed with grass or green barley, and great care is taken to give them as much only as is barely necessary; for too much nourishment makes their legs swell, and soon renders them useless. These horses, though ridden without bridle or stirrups, are easily managed. They carry their heads very high, by means of a simple snaffle, and run with great rapidity and sureness upon the worst roads. The whip and spur are very seldom employed. The latter, when used, consists only of a single point fixed to the heel of the boot. Their common whips are made of small strips of parchment knotted and twisted. A few lashes with this whip are sufficient for every purpose of the rider.

* Voyage della Valle, tom. v. p. 284.

† Therenot, tom. iii. p. 129.

Horses are so numerous in Persia, that, though excellent, they sell cheap. Some of them are very tall and heavy; but all of them are more remarkable for strength, than for gracefulness and beauty. For easy travelling, the Persians use pacing horses, which are taught this motion by tying the fore-foot to the hind-foot on the same side: When young, their nostrils are slit, from a notion that it makes them breathe more freely. These horses travel so well, that they perform with ease a journey of eight leagues without stopping*.

But Arabia, Barbary, and Persia, are not the only climates which produce good and handsome horses. Even in the coldest countries, if not too moist, these animals succeed better than in very warm climates. The beauty of the Danish horses, and the excellence of those of Sweden, Poland, &c. are universally known. In Iceland, where the cold is excessive, and where often no other food can be had than dried fishes, the horses, though small, are extremely vigorous†; some of them are indeed so diminutive as to be fit for carrying children only‡. Besides, they are so plentiful in this island, that the shepherds tend their flocks on horseback. Their number is not expensive; for their food costs almost nothing. Such as the owners can apply to no immediate use, they mark, and turn out to the mountains.

* Della Valle, tom. v. p. 284.
da Nord, tom. i. p. 18.

† Recueil des Voyages
Anderson's Description of
Iceland, p. 79.

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There they soon become wild; and, when wanted, are hunted in troops, and caught with long ropes. When the mares foal in the mountains, the proprietors put their peculiar marks on the young, and leave them there for three years. Those horses which are brought up in the mountains, are generally more handsome, bold, and fleet, than those reared in stables*.

The Norwegian horses are likewise small, but well proportioned. Most of them are yellow, with a black line running the whole length of the back. Some of them are of a chestnut, and others of an iron-gray colour. These horses are very sure footed, travel with great caution through the rough paths of the mountains, and slide down steep declivities, by bringing their hind-feet under their bellies. They defend themselves against the assaults of the bear. When a stallion, in company with mares or foals, perceives this voracious animal, he makes them stay behind, approaches, and boldly attacks the enemy, whom he beats with his fore-feet, and generally kills. But, if the horses attempt to defend themselves by striking with their hind-feet, they are infallibly gone; for the bear leaps upon their backs, where he flicks with such force that he suffocates them in a short time†.

The horses of Nordland never exceed four feet and a half in height‡. The nearer we ap-

* Hist. Gen. des Voyag. tom. xviii. p. 19.

† Postopidan, Hist. Nat. of Norway. ‡ 12 1-half hands.

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proach to the pole, we find that horses become smaller or weaker. Those of West Nordland are of a singular form. They have large heads and eyes, short necks, large poitrals, narrow withers, long thick bodies, short loins; the upper part of their legs is long, and the under short and naked; their hoofs are small and hard; their tails and manes are large and bushy; and their feet are small, but sure, and never defended with shoes. These horses are good, seldom restive or stubborn, and climb with patience the highest mountains. The pasture in Nordland is so excellent, that, when horses are brought from thence to Stockholm, they seldom remain above a year without losing their flesh and their vigour. On the contrary, when horses are carried from more northern countries to Nordland, though sickly for the first year, they recover their strength*.

Excess of heat or of cold seems to be equally hostile to the stature of horses. The Japanese horses are generally small, though some of them are of a tolerable size. The latter probably come from the mountains of that country. The same remark applies to the horses of China. We are assured, however, that those of Tonquin are nervous, of a good size, gentle, and easily trained to any kind of exercise†.

* Hist. Gen. des Voyag. tom. xix. p. 561.

† Hist. de Tonquin, par le P. de Rhodes, p. 51.

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It is well known, that horses bred in dry warm climates degenerate, and even cannot live, in moist countries, however warm. But they succeed very well in all the mountainous countries of our continent, from Arabia to Denmark and Tartary, and, in America, from New Spain to the land of Magellan. It is, therefore, neither heat nor cold, but moisture alone, that is noxious to these animals.

There were no horses in America when it was discovered. But, in less than two centuries after a small number of them had been transported thither from Europe, they multiplied so prodigiously, especially in Chili, that they sold at very low prices. Frezier remarks, that this great increase was still more surprising, because the Indians eat horses, and kill many of them by fatigue and bad management*. The horses carried by the Europeans to the most eastern parts of our continent, as the Philippine islands, have likewise multiplied exceedingly†.

In the Ukraine‡, and among the Cossacks along the river Don, the horses live wild in the fields and forests. In that large and thinly

* Voyage de Frezier dans la Mer Sud, p. 67.

† Voyage de Gemelli Careri, tom. v. p. 162.

‡ There are horses in the Ukraine which go in troops of five or six hundred. They are fit for no service, but make good eating. Their flesh is agreeable, more tender than veal, and the natives eat it with pepper. The old horses are fattened for the market, and are sold to the Tartars as dear as beef or mutton; Descript. de l'Ukraine, par Braunplan.

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peopled

peopled country comprehended between the Don and the Nieper, the horses go in troops of three, four, or five hundred, and have no shelter even when the ground is covered with snow, which they remove with their fore-feet in quest of food. These troops are guarded by two or three men on horseback; and it is only in severe winters that they are lodged for a few days in the villages, which, in this country, are very distant from each other. These troops of horses give rise to some remarks, which seem to prove that men are not the only animals that live in society, and obey, by compact, the commands of one of their own number. Each of these troops has a chief whom the individuals implicitly obey; he directs their course, and makes them proceed or stop at his pleasure. This chief likewise gives orders for the necessary arrangements and motions, when the troop is attacked by robbers or by wolves. He is extremely vigilant and alert: He frequently runs round the troop; and, when he finds any horses out of their rank, or lagging behind, he gives them a push with his shoulder, and obliges them to take their proper stations. These animals, without being mounted or conducted by men, march nearly in as good order as our trained cavalry. Though at perfect liberty, they pasture in files and brigades, and form different companies, without ever mixing or separating. The chief occupies this important and fatiguing office for four or five years. When

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he becomes weaker and less active, another horse, ambitious of command, and who feels his own strength, springs out from the troop, attacks the old chief, who, if not vanquished, keeps his command; but, if beat, enters with shame into the common herd; and the conqueror takes the lead, is recognised as sovereign, and obeyed by the whole troop*.

In Finland, when the snows are dissolved in the month of May, the horses depart from their masters, and go into certain districts of the forests, as if they had previously fixed a rendezvous. There they form different troops, which never separate or intermix. Each troop takes a different district of the forest for pasturing. To this territory they confine themselves, and never encroach on the lands belonging to other troops. When the grass is exhausted, they decamp, and take possession of a fresh pasturage in the same order as before. The police of their society is so well regulated, and their marches so uniform, that their owners always know where to find their horses, when they have occasion for them; and those which are carried off, after having performed their task, return, of their own accord, to their companions in the woods. In the month of September, when the weather turns bad, they quit the forest, march

* Extract from a Memoir communicated to M. de Buffon, by M. Sanchez, formerly chief physician to the Russian army.

home

home in troops, and each takes possession of his own stable.

These horses are small, but good and spirited, without being vicious. Though generally very docile, some of them resist, when their owners offer to take them, or to yoke them in carriages. When they return from the forests, they are fat and in fine order. But the perpetual labour they undergo during the winter, and the small quantity of food they receive, soon make them lose their flesh. They roll on the snow as other horses do on the grass. They pass the night indifferently, either in the court yard or in the stable, even during the most violent frosts*.

These horses, which live in troops, and are often removed from the dominion of man, form the link or shade between domestic and wild horses. Of the latter there are some in the island of St. Helena, which, after being transported thither from Europe, became so savage and ferocious, that, rather than suffer themselves to be taken, they would leap over the highest precipices into the sea †. In the environs of Nippes, some of them are not larger than asses; but they are rounder, and well proportioned. They are vivacious, indefatigable, and possess a strength and dexterity beyond what could be expected. In Saint Domingo, the horses are of a middle stature, and much esteemed. Numbers

* Journ. d'un Voyag. au Nord, par M. Outhier.

† Mem. pour servir à l'Histoire des Indes Orientales, p. 199.

of them are taken with snares and ropes; but most of these continue to be extremely restless and skittish*. There are also horses in Virginia, which, though sprung from the domestic kind, have become so ferocious in the woods, that it is difficult to approach them, and, when taken, they belong to the person who apprehends them. They are commonly so stubborn that it is not easy to tame them †. In Tartary, and particularly in the country between Urgenz and the Caspian sea, birds of prey are employed in hunting wild horses. These birds are trained to seize the horse by the neck and head, who fatigues himself by running, but is unable to disengage himself ‡ from his tormentor. The wild horses in the country of the Mongous and Kakas Tartars, differ not from those which are tame. They are found in great numbers upon the western coast; and some appear in the country of the Kakas which borders on the *Harri*. These wild horses are so swift, that they often escape the arrows of the most dexterous hunters. They march in numerous troops; and, when they chance to meet with tamed horses, they surround them and oblige them to fly §. In Congo, considerable numbers of wild horses are still to be found ||. They are sometimes

* Nouveau Voyag. aux Isles de l'Amerique, tom. v. p. 192.

† Hist. de la Virginie, p. 406.

‡ Hist. Gen. des Voyag. tom. viii. p. 156. § Ib. tom. vi. p. 602.

|| Il Genio vagante del Conte Aurelio degli Aspi, tom. ii. p. 475.

seen also in the environs of the Cape of Good Hope; but they are seldom taken, because the inhabitants prefer the horses transported from Persia*.

When formerly treating of the horse, I remarked, that, from all the observations of the breeders of horses, the male appeared to have greater influence upon the offspring than the female; and I then gave some reasons which rendered the universality of this fact doubtful, and even made it probable that the influence of the male and female were equal. But numerous experiments and observations have now convinced me, that, not only in horses, but in man and every other animal, the male has more influence on the external form of the young than the female, and that, in every species, the male is the principal type of the race.

I have said †, that, in the common order of Nature, it is not the males, but the females, which constitute the unity of the species: But this prevents not the male from being the true type of each species; and, what I have advanced concerning unity, ought to be extended only to the greater facility of representing the species possessed by the female, though she submits to the embraces of different males. This point I have fully discussed in my history of birds ‡,

* Description du Cap, par Kolbe, tom. iii. p. 20.

† See below, vol. viii. art. Degeneration of Animals.

‡ Hist. Nat. des Oiseaux, tom. iv.

and,

and, in the present work, under the article *Male*; from which it appears, that, though the female seems to have more influence upon the specific character of the breed, she never improves it, the male alone enjoying the faculty of supporting the purity of the race, and of rendering it more perfect.