

is usually, also, an enlargement of the lips of the vulva, and often a parting of the same, with a discharge of a small quantity of a viscid substance. It must, however, be remembered that in some cases these symptoms are not well marked, and that in some cases a mare foals without showing any well-marked symptoms indicating that parturition is about to take place; and in such cases we are surprised to find that birth has taken place in a normal manner, or else parturition is difficult, and may have reached that stage in which the saving of the foal is out of the question, and the dam's life may also be in imminent danger. While we know that the average period of gestation is about 335 days, we are also aware that the period differs greatly in different mares, and also in the same mares at different periods. Mares have been known to produce foals at apparently full term in a little over ten months, while in others the period of gestation reaches over twelve months. Under these circumstances, it will be seen that we cannot tell by the length of gestation when parturition will take place; and, when the ordinary signs of approaching parturition are absent, she may foal unexpectedly. The immediate symptoms are, of course, the appearance of "labor pains." These are exhibited by an uneasiness, and especially in primi-para (a mare producing her first foal), a nervous or excited state; she walks around the stall, stamps, lies down, and usually strains. This may be followed by a period of ease, which is succeeded by another attack, the attacks becoming more prolonged and severe, and the periods of ease shorter, until the pains become almost or quite continuous. If in the field, the mare usually seeks solitude, by wandering away from the other horses. In some cases parturition is completed in a few minutes after the first appearance of pain, while in others, even when everything is normal, the pains continue for hours. Again, in some cases there are false pains, and, although well marked, they pass off, and parturition does not take place for a few days, or longer. Some of the reasons why we consider it wise to watch a mare about to foal are: (1) She may lie down so close to the wall that delivery is impossible. In such cases the attendant can either shift her position or cause her to rise. (2) Birth may be very easy, and the foetus and membranes may be expelled without rupture of the latter, in which case the foal will suffocate. Instinct is supposed to cause the mare to rupture the membranes with her teeth, but we find that in most cases, even following an easy birth, the mare lies for a few minutes after the act, and in the meantime the foal perishes. The attendant, in cases of this kind, can rupture the membranes with his fingers, or cut them with a knife, and liberate the foal, and save its life. (3) The membranes may be ruptured, but remain attached to the foal by the umbilical cord, and interfere materially with its movements. Instinct here again is supposed to cause the mare to sever the cord with her teeth, but in many cases it fails to act. The attendant should tie the cord with a strong string that has been soaked in a five-per-cent. solution of carbolic acid, about an inch from the foal's abdomen, and cut it with a scraping motion of the knife about an inch below the ligature. (4) The foal may be too weak to rise and nurse, and, if neglected for several hours, may perish. The attendant, in such cases, can assist it to rise and nurse, or can draw a little milk from the mare and give to the foal with a spoon or out of a narrow-necked bottle. (5) The mare may be cross with the foal, and, if left alone, may kill it. The attendant, of course, in such cases, must interfere, and, if necessary, remove the foal and go for assistance. (6) There may be malpresentation of the foetus or other causes which prevent parturition. If the pains have been frequent and severe, and still no progress is being made towards delivery, the attendant should examine, and, if possible, ascertain the obstacle to delivery. If he has sufficient knowledge and skill to remove such obstacles, he must proceed to do so promptly; but if the complication be beyond his skill, he should at once send for an obstetrice. Prompt action in such cases is necessary in order to save the life of the dam and, if possible, of the foetus. There are other reasons, but those mentioned are sufficient. Many claim that it is not wise to watch a mare under such conditions, as in most cases nature effects delivery and after attention. Fortunately, this is a fact, but all breeders know that difficulty in or after parturition is not by any means uncommon, and we think that the liability of such occurring is sufficient to warrant the inconvenience and time required to watch. Under normal conditions, no attention is required after birth, other than removing the wet bedding and supplying fresh, keeping dam and foetus excluded from drafts, seeing that the foal gets nourishment, and giving the dam a nice warm feed of scalded bran and chopped oats, and attending generally to the comfort of both. When complications arise in either dam or foal, if the attendant does not understand them, and know how to treat, he should at once send for an obstetrice, as the season of parturition is a critical time for mare and foal. "WHIP."

Contracted Feet.

Naturally narrow or upright feet are often found on Thoroughbred horses, on mountain ponies, mules, and asses, and must not be confused with contracted feet. Nor must the "odd" foot so frequently observed in the blood horse. By contracted feet, we mean such as have narrowed between the heels from what was their original size and shape. Very old horses have upright feet which might be called contracted if it were not as much a well-known senile change as

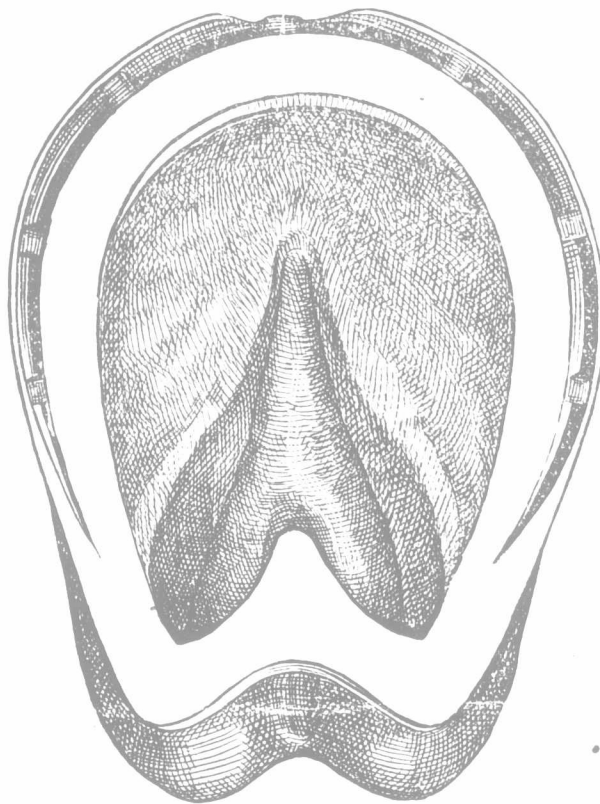


Fig. 1.—Contracted Foot-bar, Shoe-nails forward.

the "slipping down of the chest" in men getting into years. In these very old and upright feet, the coronary band will also be found wasted. For shape, quality, hardness, and good-wearing properties, the Hackney can challenge all breeds, but he is not immune to foot troubles. The young horseman should get into his mind a certain standard for front and hind feet, examining closely the prize animals, and noting their conformation, so that others of imperfect shape will at once engage his attention, and cause him to examine them more closely if a purchase is intended.

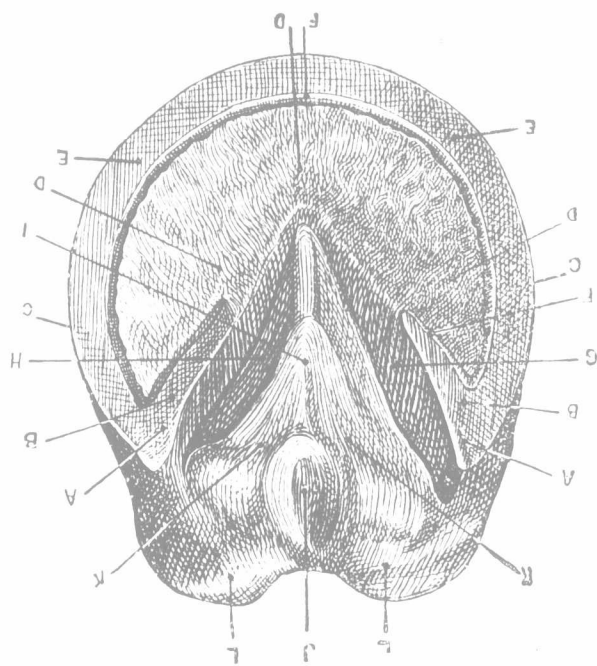


Fig. 2.—A A, commencement of bars. B B, bars. C C, the quarters. D D D, the sole. E E, the wall. F F, the toe. G G, the leafy layer. H, lateral cleft of frog. I, lateral lacunae of frog. J, body of the frog. K, middle cleft of frog. L, L, branches of the frog. M, M, horny bulbs of heel. N, N, the side walls.

THE CAUSES OF CONTRACTION.

Every horse that is shod is exposed to the chief contraction. This remark is not to be construed as a charge of bad shoeing, but the shoe is contrary to nature. Shoeing affects the foot prejudicially for various reasons and to a varying extent, according as it is a thick or thin shoe, the bearing it takes, the time it remains on, and the manner in which the smith deals with the foot at the forge. If we except the sunk tip or Charlier shoe, every iron rim nailed upon a horse's foot takes off to a greater or less extent the pressure essential to healthy function of the frog, sole, and bars. Fig. 1 shows these parts in an off fore

foot. In the unshod colt, all these parts take a share in supporting the weight of the animal. All are practically level, the frog flattened out, and almost as hard as any part of the foot, although resting on an elastic cushion. Shoeing imposes all the weight on the crust, or nearly all. The plain stamped shoe that is wider than the crust bears upon the outer margin of the sole, but the crust takes the bearing entirely with many kinds of shoes, and all (with the exception of the one mentioned above) lift the bars or cover them from ground pressure. Unless the frog is a very full one, it does not touch the ground at all. So far, we cannot help ourselves, while horses must be shod. If we let everything grow down to its utmost, and let the shoes wear very thin, a moderate bearing on the frog may be got, and a harder, sounder frog, free of thrush, may be expected. If, on the other hand, the old-fashioned farrier cuts out the sole, and lowers the bars and trims away the frog, everything tends to contraction of the foot. The frog that is not used obeys the universal law of atrophy. At first, probably the secretion of soft, imperfect horn decomposes, and the discharge is known as thrush. The next mistake is to use some drying remedy which "cures" thrush by shrivelling up the sensitive frog underneath—hurries up the process of wasting, in fact. The same man who trims away frogs has most likely a theory of "opening the heels" or making a "V" between the crust at the heel and the heel of the frog. Then, with the middle of the foot wasted away, what should happen but the falling in or approximation of the heels? "Wiring in," it is called.

Then, you have the foot shaped as in Fig. 2. It is exactly what would be expected by anyone acquainted with the anatomy and physiology of the foot. Standing in the stable upon rotted or wet moss-litter or other bedding contributes to thrush and wasting, but absence of natural pressure through the shoe and by the maker of it, causes contraction of the foot. Standing in the stable, though clean, helps to contraction for want of use of the foot generally. Navicular disease, brought on by concussion in hunting or upon hard roads, has been recognized as a cause of contraction, as the subject of it forbears to use his heels and points his feet.

NAVICULAR DISEASE FROM CONTRACTION.

On the other hand, navicular disease may be caused by contraction, as the joint is gradually deprived of necessary room and functional exercise. To the latter class belong those cases of cure of navicular lameness when blistered and turned out without shoes. There never was ulcerated bone, but there was congestion and discomfort in the contracted foot, and when a blister has made a bigger ring grow down, and the frog, bars, and sole have been restored by pressure exercised in the best possible way, by standing on grass, the navicular joint recovers. Habitual dryness of the hoof is a cause of contraction. A wild horse stands in the water from which he drinks. His feet are, therefore, frequently wet, although he may live in a very dry country. Alternate wetting and drying is the best treatment of the hoof—not greasy applications, which prevent water from being absorbed, or, if absorbed, from being evaporated again. Water in the horn tubes of which hoof is composed makes them tough, as well as elastic. A dried hoof, such as can be found in museums, will be so brittle as to break when it falls to the ground. The same hoof put in soak will regain its density, and be unbreakable as one newly removed from a dead horse.

EFFECT OF ACTION.

Action has something to do with contraction of the foot. A horse that goes on his toes, as we say, allows the heels to fall in for want of use. All navicular subjects go on their toes. All the subjects of fever in the feet try to put weight on their heels, and a wired-in heel will never be found in a horse that puts his heel to the ground slightly in advance of his toe. The horse with contracted foot goes best up hill, goes short on the level, and down hill with much difficulty. The fevered foot, with its hypertrophied heel, allows the subject of it to go down hill with the greatest comfort. Disuse causes wasting. Excessive use causes abnormal growth, hence our comparisons between the navicular subject, with contracted heels, and the foundered or fevered subject, with enlarged heels. If the reader had any previous doubts, he should be convinced by comparing horses affected with these two changes of conformation which result in altered action—or altered action, we might say, results in changes of structure. Horses with turned-out toes do not take an equal bearing, hence the unshapely foot, contracted on one side. Since horses must be shod, we should take every opportunity of removing the shoes, and during holidays in the stable let them stand on level, paved floors for a part of every day, in order to afford equable pressure to the plantar surface of the foot. If clips must be worn to prevent rested horses from breaking the crust, then they should be very narrow, and sunk into the crust to the level of the sole, as in the Charlier or South's "rational" shoe.—"Vet." in Farmer and Stock-breeder.