might be well spent in the preparation of the food. The hay should be cut finely, or as it is otherwise called, chaffed. This should be the rule. The food thus prepared is fully one-third more nutritious than the long hay, given with whole grain — the most wasteful manner of feeding a horse. This cut hay, or partly hay and straw, (1) is wetted with water sweetened with a few ounces of molasses, and the ground grain food is mixed with it. This is the ordinary ration, changed frequently by the mash, and the green fodder with the other kinds of meals. On resting days oats may be given whole, when the animal will relish the change and take time to eat them slowly.

One of the most acceptable green foods for a horse is the mixed oats and peas —1½ bushel of peas sown with 2½ of oats on an acre, and when the peas are in full blossom the fodder is ready for use That which is not used before the grain is ripe is cut and dried for feeding with the grain in it, but cut into chaff, or it may be threshed and the grain ground and fed with the cut straw moistened with sweetened water. This sweetness makes the food more palatable, and also more nutritious, for sugar is the sole carbonaceous food of animals, except fat; as the starch and the cellulose of the food are always changed into sugar by the digestive process before they can be assimilated. And the small quantity of sugar thus given with the food acts as a ferment to more readily make the change of the starch of the food into sugar in the stomach.

The digestion of food may be very much interfered with by mistakes in watering This should always be done before feeding and never soon after it The water is absorbed by the intestines with great rapidity. A few minutes will suffice to absorb three or four gallons of water, and this dilutes the salivary secretion so as to supply all the water needed for the digestion of the food, and no water will then be needed soon after feeding This avoids the washing of undigested food from the stomach into the intestines where it ferments and produces much gas and causes those frequent colics that on the whole reduce the usefulness of our work horses fully one half For every attack of disease cuts off so much of the thread of life, and there are very few horses that are not affected injuriously with colic—the result of mistakes in feeding, but more in watering—sufficiently to have an appreciable result on the duration of life. H. STEWART.

(*Cultivator.*)

IN-FOAL MARES.

The foaling season is within the near future, and it is not out of place to consider a few points in connection with it, even though there is perhaps not much that is new to be said. But if there is not much which is fresh to say, there is always a fresh generation to say it to The whole require no physician. The mare has now got into a condition when the foal makes a serious draught on her system, and although it is unwise to let her get fat, she requires a plentiful supply of food, particularly if she is at work, and undoubtedly the mare is better at work than kept in close quarters; and she may be kept at work up to the time of foaling with advantage, but discretion is advisable in this matter. A mare rarely dies through being at work up to the time of foaling, but undoubtedly there are many instances where mares are unnecessarily fatigued, and made to suffer by being compelled to exert themselves to the full at a time when nature calls for exercise, but not for too severe labour. Mares at grass generally foal with least complications; the food and the moderate exercise being the natural conditions under which the animal exists, and it is a recognised fact that the nearer nature is approached, the better the chance of a natural parturition.

Perhaps nothing does so much to upset the fœtus as causing the mare to "back" a load; a steady forward draught strains no part, but the unnatural action of forcing a load backwards cramps the hinder quarters, and the sensitive parts are so inconvenienced that an effort of expulsion is attempted, or the fœtus is forced from its natural position. Heavy loads on the back are also prejudicial, and not unfrequently cause difficulties. Very heavy walking, where the animal can only lift her legs out of the slough by an extraordinary effort, are hurtful. For the same reason it is wrong to allow a mare heavy in foal to act as a chain horse on a manure heap. (1)

If it is too early to obtain freshly grown green food, a small allowance of carrots act beneficially on the system, and a small quantity of pulped mangolds may be given with advantage The idea is to give them rather as a medicine than as a food. When a mare foals before grass time she is in advance of nature, and therefore her artificial food should be as nearly in accordance with her natural food as circumstances permit. When animals are left to themselves they invariably produce their young at a time when there is a new supply of green food coming on, so that both they and their offspring may take advantage of it. Domesticity upsets this, and the females come into season earlier. A few roots keep the bowels free and the blood in a healthy condition. Perhaps the efficacy of the roots at this period of the year is best realised when their effect on out of health horses is noticed. Every-one who has had the misfortune of owning a horse afflicted with grease or other "humoury" diseases knows how soon the benefit of a few roots added to its diet becomes apparent, for the swellings rapidly decrease, and the animal is more comfortable. The medicinal as well as feeding properties of bran are well known to every horse-keeper, and during the few weeks previous to foaling an occasional bran mash —made of scalding water, and allowed to become thoroughly softened before use, is most valuable; and when the time of foaling approaches, a small mash may be given daily with advantage.

Perhaps no domestic animal shows signs of approaching parturition more unevenly than does the mare. The ordinary signs of the udder distending, the teats becoming waxed, commence in different mares at such irregular times that no definite time can be fixed when the foaling will actually take place. Even men of great experience with mares are constantly far out of their reckonings. The "dropping of the bones" is a fairly reliable sign, but mares differ much in the length of time which elapses between this action and parturition. Then again, the period of gestation is sufficiently irregular to afford only an approximate guide as to when the mare will foal; consequently, it usually becomes necessary to watch the mare for several days before the foal appears, as neglect to do this not rarely causes loss. We can speak of personal loss through being too certain, and we know of others who have suffered in a similar manner. When all is right, the foal comes speedily, and the whole operation is rapidly over, the foal up and sucking, and the mare little worse for her labour. The danger is chiefly in that the mare may get down and the foal may not get clear. We remember seeing a mare and foal dead at 6. a. m. which, according to the horse-keeper, who had forty years' experience, did not show signs of immediate parturition two hours previously. Yet the foal was coming all right, but the mare fell backwards, and became cast in her loose box, and both succumbed. A man at hand would have prevented the loss, yet the mare had been visited every night for more than a week. So the need of constant watching is very evident.

(*The Mark Lane Express.*)

(1) Hay should never be given, when chaffed, without straw. It *balls* in the stomach very frequently. ED.

(1) That is, in drawing loads of manure up to the top of a mixen to compress the dung—a universal practice in England. ED.

Competition of Agricultural Merit.

THIRD YEAR, 1892.

Report of the Judges of the Competition.

No. 42.—M. THOMAS POULIN.

The 10th July we visited the farm of M. Thomas Poulin, of Ste. Croix, Lotbinière. There are 250 acres in all; 247 arable, 3 not ploughable, and a garden 50 x 150 feet. Soil: the major part heavy land, the rest sandy.

M. Poulin's rotation would be perfect if all the land he ploughs received manure, it is this: First year, wheat, barley, oats, buckwheat, flax, with seeds, hoed crops with dung ploughed in. Second year, wheat with grass-seeds, after the hoed-crops. He mows 5 or 6 years and pastures 3 or 4 years. He manures every year about 12 to 15 arpents of the ploughed part; but a large part gets no manure; wherefore we deducted 1 mark for this item.

The division of the farm, and the fences, are good.

As there were some daisies in the field, we took off half a mark from the item of freedom from weeds.

House good, but the cellar too low.

Barns, stable, cowhouse, piggery, sheepshed, are well suited to the farm. We found a silo outside the cowhouse, and a boiler at one end of the cowhouse, for scalding the fodder and fermenting it. This we approve of, as tending to increase the production of milk.

Implements nearly complete.

Manure well preserved and increased.

The general order good except in the buildings.

No books kept.

Satisfactory permanent improvements, as will be seen by the marks allowed.

M. Poulin has a half-bred Hambletonian stallion, 2 brood-mares, a yearling colt, and a foal; 1 bull, 19 cows, 2 fatting beasts, 15 2-yr.-old beasts, 5 calves; 1 ram, 12 ewes, and 13 lambs.

Crops: 8 arpents of wheat, 32 of oats, ½ of seed-timothy, 2¼ of potatoes, ¼ corn to ripen, 1 of silage-corn, 120 in meadow, 70 in pasture, and a garden of 50 x 150 feet.

M. Poulin having been accorded 76.50 points wins a bronze medal and a diploma of Great Merit.

No. 43.—MR. DUNCAN STEWART.

On the 6th of July, we were at the farm of Mr. Duncan Stewart of Inverness, Megantic. This contains 265 acres. 55 arable, 10 unploughable, 193 in bush, 1 in orchard, and a garden 75 x 77 feet. The soil is loam with porous subsoil.

Rotation perfect: First year, oats, pease and oats. Second year, dunged oats with seeds, dunged hoed-crops. Third year, after the hoed-crops, wheat, and barley with seeds. He mows 4 or 5 years, and pastures 3 years.

The division is perfect, and the fences fair.

No weeds in either the hoed-crops, the meadows, or the pastures; the two last are pretty good.

The house is good and well suited to the wants of a family.

Barn, stable, cowhouse, piggery, wood and cart-lodge, are all in excellent order.

The splendid silo, which gives great satisfaction, is close to the cattle.

Implements nearly sufficient.

Maximum of marks allowed for increase and preservation of dung, which are perfect. General management good, but the fences are not quite perfect.

Only one point out of three accorded for accounts. Permanent improvements satisfactory, as will be seen by the marks granted.

Stock: 2 work horses, 1 2-yr-old colt and a foal; 1 bull, 1 cow, 8 butcher's beasts, fine and large ones, 4 young shorthorns, 4 yearling steers, and a bull-calf.

Crops: 1 acre of wheat, 3 of oats, 4 of gabourage, 1 of potatoes 1 of silage-corn, 12 in meadow, 35 in pasture, 1 in orchard, and a garden of 75 feet square.

The number of points, 76.15, accorded to Mr. Stewart, entitle him to a bronze medal and a diploma of Great Merit.

No. 44.—M. HYACINTHE LAUZE.

We were at the farm of M. Hyacinthe Lauzé of St. Louis de Lotbinière on the 17th of July. It contains 200 arpents, 100 arable, 99 not arable, and a garden 60 x 90 feet.

The soil is strong clay, but a part is sandy.

M. Lauzé's system of rotation is faulty, for he manures a fewer number of arpents than he ploughs, and we deduct one mark in consequence.

We take off a half-mark from the division of his farm, as the fields we think are too large. The fences are well made and in good order.

No weeds in the fields.

The house is well suited to the wants of a family.

Barn, stable, cowhouse, sheepshed, piggery, are of the old-fashion, and not very suitable.

Implements almost sufficient in number, of good kinds, and in good order.

Preservation and increase of manure not perfect; there is no shelter for it.

General order, good.

M. Lauzé keeps no books.

Satisfactory permanent improvements—⅔ marks for this item.

Stock: 2 brood-mares, 1 yearling colt; 2 bulls, 7 cows, 6 yearling beasts, 2 calves; 1 ram, 6 ewes, 3 lambs.

Crops: 7 arpents of wheat, 30 of oats, ½ of pease, 3 of buckwheat, 2 of timothy, ⅓ of beans, 1½ potatoes, 40 in meadow, 30 in pasture, and a garden 60 x 90 feet.

We granted M. Lauzé 75.95 marks; so he is entitled to a bronze medal and and a diploma of Great Merit.