

The Apiary.

Fertilization of Red Clover by Bees.

I notice a correspondent of your paper says that honey bees do not fertilize red clover blossoms, says a correspondent of the Scientific American. They are often very busy working on red clover, especially the Cyprians and Italians, and why do they not fertilize it? They may get honey too far from the base of the tube, while the bumble bee's tongue reaches to the base. If the scarcity of bumble bees accounts for the lack of seed on the first crop of clover, why not cultivate and domesticate the bumble bee, and winter them so as to have enough of them to fertilize the first crop? It would certainly be advantageous to the hay, also seed the ground by shattering.

We need not cultivate bumble bees if we could find some other insect that would answer the purpose, and one that would combine some other points of usefulness would be preferable, but clover seed in first crop is a prize worth some labor to secure, is it not?

[A valued correspondent, who is an experienced agriculturist, to whom the foregoing was submitted, gives the following reply: Italian bees and some other varieties of honey bees gather some honey from red clover blossoms, when the secretion of honey is profuse, but no race of bees has yet been introduced or produced having a tongue of sufficient length to exhaust the honey secretion from red clover blossoms. The honey gathered from red clover is of superior quality and very fine color.

The fact that not more than one-fifth of the first crop of red clover blossoms contains seed seems to prove that honey bees do not fertilize that variety of flora.

This failure probably results from the insufficient length of the ligula in honey bees to properly deposit the fecundating pollen.

May it not, in a measure, be due to some singularity of the form of the pistils, which may only be entered by the longer and stronger ligula of the bumble bee?

It would also appear that the fertilization of red clover blossoms is chiefly, if not wholly, performed by bumble bees.

Darwin, in his "Origin of Species," alluding to this fact, says: "We may infer as highly probable that were the whole genus of humble bees to become extinct or very rare in England, the hearts-ease and red clover—which they fertilize by carrying pollen from flower to flower—would become very rare or wholly disappear."

The cultivation of red clover was not successful in Australia until after the importation of bumble bees to that country.

In suggesting the cultivation and domestication of the bumble bee, in order that a sufficient number may be present in time to fertilize the first crop of red clover, the correspondent introduces a subject full of interest and stings, particularly stings. He also apparently overlooks the fact that the bumble bee belongs to the solitary species, and, as is the case with the wasp, ordinarily only the queen survives the winter.

The partial domestication of the bumble bee, even to the extent of furnishing warm winter quarters and the stimulation of early breeding, would be attended with such difficulty that economy would suggest that the matter be left entirely to nature.]

Correspondence.

NOTICE TO CORRESPONDENTS.—1. Please write on one side of the paper only. 2. Give full name, Post Office and Province, not necessarily for publication, but as guarantee of good faith and to enable us to answer by mail when, for any reason, that course seems desirable. If an answer is specially requested by mail, a stamp must be enclosed. Unless of general interest, no questions will be answered through the ADVOCATE, as our space is very limited. 3. Do not expect anonymous communications to be noticed. 4. Matter for publication should be marked "Printers' MS." on the cover, the ends being open, in which case the postage will only be 1c per 4 ounces. 5. Non-subscribers should not expect their communications to be noticed. 6. No questions will be answered except those pertaining purely to agriculture or agricultural matters.

Correspondents wanting reliable information relating to diseases of stock must not only give the symptoms as fully as possible, but also how the animal has been fed and otherwise treated or managed. In case of suspicion of hereditary diseases, it is necessary also to state whether or not the ancestors of the affected animal have had the disease or any predisposition to it.

In asking questions relating to manures, it is necessary to describe the nature of the soil on which the intended manures are to be applied; also the nature of the crop.

We do not hold ourselves responsible for the views of correspondents.

The Best Horse for the Canadian Farmer to Breed.—This is a subject of vast importance to the farmers of Canada. The horse that will be most profitable for the farmer to breed is one best fitted for the varied work he has to perform. This work, with the majority of farmers, consists of drawing the plow, harrow, harvesting machines, loads to mill and market, as well as light driving. He must therefore have weight, endurance and speed. He should stand fifteen or sixteen hands high, and weigh from eleven to fourteen hundred pounds. He should have a natural, easy walk of four miles an hour. He must have good style and action; head not too fine, broad between the eyes; neck of medium length, tapering towards the head, slightly arched, starting square from the shoulders, which should be of medium slope between the square shoulders of the heavy draft horse and the trotter. He should be well balanced; rather heavier in fore part, caused by depth, not by breadth; clean legs, without long hairs; line and flank well rounded. My reasons are: Such a horse has all the frame and machinery, and will perform as much work on a smooth farm or the road as a heavy-fleshed one in three-fourths the time. Over hills and through deep snows he can take a load where the heavy horse cannot go at all. An objection made by those unacquainted with such an animal (and by those only) is that he is hard to keep. His owner finds this to be true for the simple reason that some one else is sure to want him. He will outwear another horse for the same reason that an easy running spring wagon will outwear one without springs.—BENJ. J. CRAWFORD, Andover, N. B.

Mange in Cows.—1. I have a high grade Jersey cow that is troubled with some kind of skin disease which causes her to scratch very much and rub the skin off, and sores come on her, especially on her back. What treatment would you advise? The cow is kept in a good barn (not too warm), and is not allowed out doors except on very fine days. She eats well and is in good order. 2. What treatment would be best for a swamp, to make into permanent pasture, and what kind of grass seeds is best for it? Am living near the sea shore, where sea weed is the principal manure used.—SUBSCRIBER, Yarmouth, N. S.

[1. Your cow is most likely troubled with Mange, possibly with Eczema. The former is a parasite in the skin, and the latter arises from high feeding. Get a solution of carbolic acid of the strength of one to thirty, and rub it thoroughly into the skin; but it must not be rubbed all over the body at once, as it will be apt to cause poisoning in the system. Rub a small patch of the skin each day, say one or two square feet, making only one application on each patch. This is the most effective remedy for Mange. If you can drain your swamp thoroughly, a variety of grasses and clovers may be sown—see prize essay in our March issue; but as climate as well as soil has to be considered, you should make tests for yourself. But if your land is liable to be overflooded, the best grass is the Water Meadow Grass (*Poa aquatica*). In selecting permanent pasture mixtures, much depends upon the subsoil, for the deep-rooting clovers will not flourish in a stiff, damp subsoil.]

Milling Qualities of Democrat Wheat.—We think you are justly entitled to the thanks of the millers of this section of Ontario for your good judgment and enterprise in bringing to the notice of our farmers the good qualities of a fall wheat known as "Democrat." We find it yields a larger percentage of saleable flour than any other white winter wheat now grown in Western Ontario. The flour made from this wheat combines both strength and color, and possesses all the good qualities of the old and much valued Treadwell, but which has run out. We cannot too strongly recommend the Democrat as being the best wheat both for the farmer and miller, and we think you are entitled to a pension for your efforts in the past to bring the best grades of wheat into this Province.—HUNT BROS., Proprietors City Mills, London, Ont.

Coarse Manure for Sandy Soil—Green Manuring—Bots.—1. What do you consider the best method of managing and applying coarse, strawy barnyard manure on sandy soil with gravel subsoil (no particular crop considered)? 2. Would wheat, oats or buckwheat be best to sow clover seed with in case grasshoppers were going to be bad? 3. What crop next to clover do you consider best for pasturing and plowing down, or green manuring, on such soil? 4. I have a mare that shows symptoms of being troubled with bots, viz., frequent rolling in stable, staring coat, and now and then an attack of pain keeping her restless some hours until relieved by a bran mash. Could you give me a safe and effectual remedy?—H. K., Bloomsburg, Ont.

[1. Coarse manure should never be applied to sandy soil; it should first be fermented. 2. We would prefer oats. 3. Clover is so far superior to anything else that we don't feel justified in making any other recommendations. It takes large quantities of nutriment both from the air and the subsoil, and deposits it on the surface. With a gravel subsoil, however, there may be some excuse for growing buckwheat or any other crop that produces a rank top growth with shallower roots. 4. Bots are natural to all horses. Your mare is troubled with indigestion. Give her a purgative, followed by a tonic, such as gentian, and feed easily digested food.]

Overfeeding for Prizes.—I send you the following clipping from the "Northern Whig" of Belfast, Ireland, which agrees with different articles of yours on the subject of over-fat prize cattle.—"A series of shows of fat cattle is an invariable accompaniment of Christmas. Then one may hardly recognize in a huge mountain of beef the patient ox which was last seen browsing among its own pastures. The transformation that has been effected is great. A fattening process has been undergone in order that the festivities consequent on the rejoicings and mutual expression of goodwill at this season of the year may be fittingly celebrated. Like the gorging of the Strasbourg geese for the purpose of enabling the epicure to enjoy his *pate de foie gras*, we suspect the fattening of cattle for Christmas is not unattended with pain to the dumb animals, and Lord Harris in a recent communication certainly proves that it does not pay the exhibitor. At the Canterbury Cattle Show Lord Harris exhibited a bullock which was awarded the second prize. The fattening operation was conducted on business principles, and he clearly shows that it is no profitable investment to fatten cattle to the abnormal size required for prize winning. The animal in question was purchased for £28 7s. The gradual increase in the weight of the animal is stated—although during the month of May its progress remained stationary, and in July the increase was disappointing. The entire cost of fattening amounted to £29 5s 6d, against which was to be placed the value of manure and prize, which came to £9 18s. After prize-taking the bullock was sold for £25, showing a clear loss by the transaction of £12 14s 6d. Of course Lord Harris in this statement takes no account of the breeder, whose prices, he says, are fictitiously kept up by these prize offering shows. The instance, however, which he cites and supports by reliable figures, apart altogether from the sufferings which the fattening process entails on the animals, is well worthy the attention of those who send their stock for exhibition at fat cattle Christmas shows."—W. S. S., Beulah, Man.

Red Russet Apple—Jessica Grape.—1. Please let me know in the next issue of the ADVOCATE if an apple called Red Russet contains merit, and is worth grafting. It is said to have originated in New Hampshire. I bought one tree last spring from a nursery near St. Catharines, with a view of grafting from it this spring, but would like to know more about it before I graft. 2. Be kind enough to tell me something about the Jessica grape—if it is hardy enough to do well in the Annapolis valley, Nova Scotia, and if it compares favorably with the Niagara.—G. E. C., Middleton, N. S.

[1. The Red Russet is a hardy apple and possesses excellent qualities. It is little known amongst our farmers, but fruit growers who are acquainted with it speak highly of it. 2. The Jessica grape is too new yet to speak positively about it. However, it is one of the best flavored varieties, better flavored than the Niagara, and it compares with the Delaware as to hardness.]