

pearances are against the probability of a good hay crop, the farmers here cut oats before ripening and store it for fodder. Various opinions are expressed as to whether it is or is not injurious as food for horses, though the general opinion is that it is much better for milk cows and for fattening cattle than hay. Would your paper enlighten us? Be good enough also to say the best time to cut oats for fodder.—R. H., Douglastown, N. B.

[We have received several inquiries from time to time as to the comparative feeding values of different kinds of farm products, and in this issue we explain the methods by means of which farmers can make their own calculations. Please, therefore, read our articles on "Feeding for Dairy Products, Beef and Growth," and "Valuation of Farm Products according to their Chemical Composition," then read this again, and you would confer on us a great favor by letting us know if you and others interested in your question now thoroughly comprehend the problem, as we do not wish to waste time and space in explaining what cannot be comprehended by the average farmer. Average timothy, red clover and fodder oats have respectively an albuminoid ratio of 1:3.1, 1:5.3, 1:7.2 (It makes little difference whether these foods are calculated as dry or green, for, if well cured, there is little or no nutritive substance lost). By these figures it will be seen that clover has the highest nutritive value, and that fodder oats is somewhat higher than timothy. If, however, the timothy is grown on a richer soil and is better cured than the oats, it may be considerably more nutritious. Again, if timothy is fed with foods that are too albuminous or concentrated, such as peas, bran or oilcake, then it will produce better results than the oat fodder, but if fed with foods that are too bulky or carbonaceous, such as straw, corn or corn fodder, then it will produce worse results than the oat fodder. Again, if the timothy is cut in an earlier or more immature stage than the oat fodder then its nutritive properties may be higher, for it will contain more flesh-forming matter and less woody fibre. Again, if the individual tastes of the animal be such that it will relish timothy better than oat fodder, then the latter will produce better results than the former. There is nothing in oat fodder that should make it injurious to horses, except that too much may be given, and this objection will apply to all foods. If horses do not relish it, feed it with something else, and watch that their bowels are in a right condition. The same principles apply to all foods, and if you carefully study the editorials mentioned, you cannot fail to come to an intelligent conclusion. With regard to the differences in the nutritive qualities of hay cut at different dates, which applies to your question, please consult our issue of last June. If you want a nutritious and concentrated food, say for horses, milch cows and growing stock, cut early, when the grain is in the milk and before the straw gets too woody; but if you want it merely to sustain stock over winter, let it grow four to eight days longer, for then you will get a greater yield per acre. The best test is to chew the end of a straw, and you will then find out whether it is getting too woody or not. A good deal depends upon the variety of oats.]

How to Feed Barley.—Would you inform me through the ADVOCATE which way hogs will receive the most benefit from eating barley; by having it boiled, or having it ground and fermented.—A. J. S., Olmsted, Ont.

[We had hoped to write an editorial article for this issue on cooking and grinding feed for stock, in answer to numerous inquiries, but our space has been too limited. Meanwhile, don't boil or ferment your barley, and look out for reasons in our next issue. If you have a grinding apparatus you may use it, but don't purchase one till you hear from us again.]

Levelling Implement.—1. Do you know how to make a machine for levelling a field. I have been told there is one made; please describe it if you know. 2.—Is there any way to prevent water from smelting bad? The cistern is new. If the air could get at it would that help it?—W. E. L., Dundas, Ont.

[1.—We don't know of any such implement except the ordinary road-scraper. You can easily make one by taking a piece of timber, say five or six feet long, hewing it to one edge, and putting handles in like a plow. The kind of implement will depend upon the size of the hills which you have to level down. 2.—Treat the water as described in our last issue. No cistern should be air tight.]

Beware of Swindlers.—I would like a little information concerning the Globe Lightning Rod Co. The agents of that company asked me to act as their agent in my parish. I consented and they left me some goods. I gave my note for the amount (according to his figures), but I found that, according to the firm's list he left me, I paid nearly two prices. I wrote the company for an explanation and got no answer, so I come to you, think-

ing you could give me some information, seeing that the company advertises in your paper.—F. M. S., Rosedale, N. B.

[We have frequently warned our readers against having any transactions with patent-right agents, and have advised them to write to headquarters before closing any bargains. We would not have inserted the advertisement of this company had we not had good reason to think it was doing an honorable business. We interviewed the Manager about your case and he informs us that he has nothing whatever to do with the business in the Maritime Provinces, that Mr. Thos. Robertson, Barrington, N. S., has the control of all the Maritime Provinces. He further informs us that there have been several persons transacting a fraudulent business in the Company's name, they having procured some of their old forms in a clandestine manner, and some cheap and inferior wire; that he caught one, Gabriel Reeves, and sent him to the Central Prison for six months, and a man named Hetne was sent to jail for one month. It would not be safe for us to give you legal advice without knowing the full particulars of the transaction, but from the facts you give we think you will be safe in refusing to pay any more than you think reasonable, as he will not likely sue you if there is anything dishonorable in the transaction. You had better consult a good lawyer. We dare not expose these swindlers as we ought, for the law of libel is such that we are apt to involve ourselves in difficulties.]

Marl as a Fertilizer.—In 1876 a party from this section wrote you with a sample of marl, and in May, '76, you referred to it in your paper. Have you learned anything since then of the value of marl as a fertilizer, or whether there is a demand for it? I am interested in developing the marl bed if it should be worth doing so.—W. J. K., Penetanguishene.

[Marls vary greatly in their composition, but they are chiefly valuable as a source of lime, the quantity of carbonate of lime varying from 10 to 80 per cent. The other ingredients in the composition of marl soils are clayey matters containing variable percentages of phosphate of lime and potash. "Shell marl" is nearly pure carbonate of lime, usually found in swamps. You should send an average specimen of your marl to a chemist for analysis, and then its exact value can be easily ascertained. When carbonate of lime is heated, the carbonic acid is driven off, lime being formed, which, when treated with water, slaked lime is procured. This is often used as a fertilizer, and some soils are benefited by it, mechanically and nutritively; but the carbonate, even when finely powdered, is very slow in its action, and its chief use is to improve the mechanical texture of heavy soils, although it will also slowly furnish lime to plants when the soil is deficient in this constituent of plant food. On light soils which contain very little vegetable matter, the carbonate is preferable to the caustic lime. In this country, lime, as a fertilizer, is becoming less popular every year, as it uses up great quantities of manure, and our best farmers are changing their modes of cultivation in such a manner as to obviate the necessity of using lime. (See last April issue of the ADVOCATE.) You may be able to obtain a local market for your marl, but it will be too bulky for extensive shipment, as the fertilizing ingredients which it is likely to contain can be more cheaply obtained in a more concentrated form.]

Bark Splitting on Apple Trees.—What is the cause of the bark of apple trees splitting near the ground, killing the tree? I have had several of my apple trees die though the bark splitting near the ground. When first seen in first part of summer, probably one or two small checks will be seen, but before long the bark will be loose quite a distance around the tree, and on examination the bark will be loose and dead.—J. C., Hartford, Ont.

[This condition has often been discussed by fruit growers, and it is now the generally accepted opinion that the splitting of the bark is caused by the hot sun breaking out in spring when the sap is beginning to rise. The trees can be protected in various ways; placing a shingle in the ground between the foot of the tree and the sun will perhaps be the most convenient protection.]

Cure of Pin Worms.—I have a mare that is very bad with pin worms. I have given her turpentine and raw oil, and it does not do any good. Kindly let me know what will kill them.—T. B., Sidney, Manitoba.

[Your remedy usually proves effectual; but the following treatment has nearly always proved successful: Go to the druggist and get three ounces of quassia bark or chips, put it into half a pailful of water, and let it simmer in a pot on the stove for half a day; then let it cool and inject two quarts every other morning per rectum. You may also give a dose (1½ pints) of raw linseed oil twice a week. Continue this treatment so long as you find worms coming away.]

Advantages of the Ontario Agricultural College—Farmers' Sons Leaving the Farms—Crown Lands.—1. What is your opinion of the advantages of a two years' course at the Guelph Agricultural College? Is it more beneficial than going right on a farm and taking the work as it comes? 2. I recently wrote to the Secretary of the Agricultural and Arts Association for copies of prize essays on "The Increasing Tendency of the Times for Farmers' Sons to Leave the Occupation of their Fathers for other Pursuits; its Cause and Remedies," but having received no reply, I write to you for information. 3. Could you recommend any agricultural works useful for a young man "Just out"? 4. Are there any free grant lands in Ontario and Muskoka? 5. Are there any farms to rent or for sale about the Niagara Falls?—W. C. P., Colborne, Ont.

[1. If you want to learn the principles of farming, there is no better institution in the world than the Ontario Agricultural College; but if you wish merely to obtain a practical knowledge of farming, you will attain your object much more quickly, cheaply and efficiently by going on a well-conducted farm. The managers of the Model Farm follow the old rut of practical farming, and make no use of the principles taught in the College; in fact they sneer at the science of farming. Although they follow the old methods of farming, they carry out these methods in a most extravagant manner, so that the student who follows them in after life will be sure to become bankrupt. Under a first-class farmer, you will be able to learn economical management, as well as the best methods, and as to the principles you can, at the same time, acquire them from good agricultural papers and books. Go into a settlement where there is a variety of soil and where diversified husbandry is most extensively practiced, if you are going into mixed farming. In this country every farmer has to study the special requirements of his own soil. 2. Four essays on the subject have been published in the report of the Agricultural and Arts Association for 1882. These reports were published at the public expense, and you are entitled to a copy. Write to the Hon. A. M. Ross, Commissioner of Agriculture, explaining the delinquency of the Secretary of the Association, and if he does not respect your letter, kindly inform us, as we consider it our duty to look after government officials. 3. Unfortunately there is no useful work on Canadian agriculture, but we supply our subscribers with all the best works on general agriculture, live-stock, dairying, etc. See list in our advertising columns. 4. Write to the Commissioner of Crown Lands. 5. There are farms for rent and sale in every part of the Province.]

Fish Culture.—I have a few thoughts to present to my fellow farmers all over the country. I know the times are hard and we are all anxious to turn an honest penny. When wool is only 25 cts., and wheat 80 or 90, we must look sharp to make both ends meet, and a free exchange of thought often does much to assist us. I feel that I owe all I have to ideas gleaned from different papers. I bought a farm near this city in 1881; then it was thought that everything was at its lowest and times must brighten up, but expecting good times did not make my payments, I could not raise grain, sheep or hogs with any profit, so I was driven to look for something new. I struck on raising fish. I will say to start with that the U. S. Government is doing all in its power to advance fish culture and will give to anyone desiring to start in the business, from 12 to 20 German carp fish to start and breed from. This is a new field and almost entirely unoccupied. It requires no capital and yields a large revenue. One eighth of an acre devoted to German carp will make a clear profit of \$300 at the very lowest estimate. I think I hear a host of fellow-farmers say, just as I did, "I would like the \$300; where can I get information regarding the fish business?" Write to the U. S. Fish Co., Columbus, Ohio, enclosing a plainly addressed envelope, and you will receive free the information you desire. Will they tell me how to get the fish promised by the Government? Yes, they will send you blanks to be filled out by which you can get the fish without cost. Is there any doubt of my making money in the fish business? No. Do you think the Government would go the expense of raising fish and shipping them to different parts of the U. S. and then giving them without any pay to her citizens, unless she was positive it was a profitable trade for those citizens to engage in? How large a pond must I have to start with, and what will it cost? A pond 15 or 20 feet across will do for a start and it will cost nothing but a little digging. There is no stream on my lot; what will I do for water? Carp do not require running water; they do better in still water, even in swamps. They delight in mud. What sections of the U. S. are best for raising fish? Any part will do. Carp are such excellent fish that they always command a good price and ready market. Will it not take a long time to get a start with the 20 fish supplied by the Government? No, indeed. Each female carp lays from 40,000 to 50,000 eggs every year. They increase amazingly fast, and will increase your dollars if attended to. What season is best to make a fish pond? Right away. The Government will send you fish between Nov. 1st and March 1st. Do you have to feed the fish in winter? No, they eat nothing during the winter months, but lie in a dormant state, while sheep and cattle are eating their heads off. If the Government would offer to send a fine pair of pigs to any one who asked for them, every farmer in the land would send in his name. Then why not get some fish when they cost you nothing, care for themselves, and bring you more money than any kind of farm stock. I wish all papers in the land would urge this matter on their readers, as I know they would be conferring a lasting benefit.—W. B., Pittsburgh, Pa., U. S.