assistants, found their way down the steep cliff, and after taking sundry measurements and levels, decided that the present excavation for piers would have to be carried 10 feet farther back. This work will be set about without any delay, but in itself it is a vast undertaking; all the scaffolding, bents, and false work already erected and firmly anchored in the rock on the Canadian side will have to be moved back, as it has been planted on the top of the portion of the slope to be removed. The foundation for the bridge will not reach what may be termed the solid rock itself. This it would be impossible to reach, as the water flows in from the river so fast, percolating through the rocks, that no pump could keep the foundation clear. The foundation is formed on the huge boulders and vast rocks which have fallen from the cliffs above during a succession of ages. The interstice between them is filled with Portland cement, mixed with fine sand, forming a foundation of undoubted solidity. Taking back the foundations will necessitate a delay in the work on this side the water.

It is not very clear as to what advantages will arise from this step. No one expects to find a more solid point on which to build the bridge, as the whole slope is most probably composed of rocks, &c. which have fallen from above. Again it will not be an easy matter to get below water mark.

On the American side the false work assumes vast proportions, and machinery at the top of the bank mixes the fine concrete and empties it into a flume which reaches almost down to the water's edge. The foundations on the American side are about completed, and from them will speedily rise the piers of stone work.

Over three years were required to complete the present Suspension bridge with only a single track, and if the Canada Southern bridge with its double track can be finished within seven months and a half, it will certainly show that great strides have been made towards the proficiency of bridge engineering.

STOCK.

PEAS AND BARLEY AS FEED.

I find that Canada, which used to be so favorable for the pea crop, is now visited by that injurious insect, the bug. I have always placed a high value on pea meal, and esteem peas and the house bean, which grow together in England mixed, more highly than corn, or even barley, although I hold the latter to be most excellent for cattle or hogs, when fed to the former dry, and the latter mixed with water. I never saw fatter hogs or bacon than those made from barley meal, thus mixed. All stained barley was used for this purpose, while the brighter, gathered without rain after being cut, sold much higher; and in England, but few harvests pass without a good share of stained barley. There is much of it in Canada this season to be bought cheaper in proportion than oats or corn. I think a bushel of barley is better and more economical to the feeder than a bushel of peas that are full of bugs, but such a lot of peas as I saw a gentleman buy for seed, without a sign of a bug, and of most excellent quality, will exceed barley, and lay on more flesh, according to weight. Either barley or peas are more profitable than corn to grind. Such has been my experience. Five bushels of oats and a bushel of flaxseed, well mixed together before grinding, I have always found profitable food to lay on flesh. I contend that neither of these kinds of feeds will change the nature of the flesh that is bred in the animal, but will increase whatever kind of flesh is bred there. The quality of beef depends upon the breeder, not the feeder. I have proved this to my own satisfaction for many years; although others have differed with me, none has had strength enough to induce me to change my opinion. I still think it rests on a good foundation, what I feel in the live animal, and see the result of in the beef, a sufficient prop to my position to induce me to hold to my text. TRAVELER.

Guelph, Ontario.

WHEN TO SHEAR SHEEP

J. L. Thompson, in the *Indiana Farmer*, advises as follows:—

"From last season's experience, I think we must shear earlier than we have been in the habit of doing, as there was a great deal of trouble on account of maggots, and a great number of sheep lost, which can be avoided by early shearing. And in order to do this we must discard the practice of washing the wool on the sheep's back, as this cannot be done in this latitude much before the 1st of June, and by the time the sheep are dry and the oil has sufficiently raised, it will be the middle of June before shearing can be safely done. I would therefore recommend shearing without washing, and as early as the season will admit of with safety to the sheep, say from the 1st to the 25th of May for the general farmer. And breeders that make a specialty of sheep and have stable or sheds for them, will find it to their advantage to shear still earlier. Especially ewes that are suckling lambs, as the lambs do much better after the ewes are shorn, as they give much more milk after being shorn, on account of the extra heat tending to dry up the flow of milk. And ewes that have lambs lose considerable of their wool if not shorn till the first of June. Shearing earlier we get a greater growth of wool, as April, May and June are the best growing months for the fleece. This gives the sheep a good protection for the hot weather of July and August, which is of more importance than we are apt to consider.

"Of course we must avoid extremes in this matter. If we shear early we must house our sheep of cold nights and out of cold wind and rain storms; humanity demands this. And, in fact, early shorn sheep can stand the same degree of cold better than later shorn ones. As Randall very truly says. 'The change to them is not so great or sudden as when cold storms follow shearing after they have been sweltering in their fleeces in hot weather.'"

TREATMENT OF JERSEY CALVES.

J. H. Walker, in an article in the *Country Gentleman* on the above topic, condemns in strong terms the high feeding of calves designed for dairy stock or any feeding beyond what will keep them in a fair, thrifty condition. He says:—

The younger the animal is when this bad habit of making flesh and fat begins, the more controlling it will be, and the more likely the animal will be to transmit that habit to its offspring.

Nothing should be fed to bulls more stimulating than good hay, and at times a few oats, shorts, or both, with coarser food. Plenty of coarse hay, straw and flat grass even should be given at times. The digestive organs of a butter-bull, especially when young, should be taxed and distended precisely as those of a female designe to produce butter. Heifers should be fed nothing but skimmed milk, grass, rowen, good hay, coarse hay, flat grass, straw, corn stubble, in fact everything to distend and tax their digestive organs, and with nothing more stimulating, before they drop their first calf, than oats, or shorts, or similar food. The rule for keeping heifers to make good cows, is rather extravagantly expressed by saying: "A heifer should have a paunch large enough to turn itself around in." Unsightly as they are in such condition, such heifers make the best cows. * * * The rule is to feed just enough of such things as are found necessary to keep the animal in a thrifty, growing condition and no more—the less the better—and never allow a milk or butter animal to lay on fat. Experienced dairymen never go into herds that are fat and sleek for their cows. They know that the feeding necessary to produce such conditions in milk and butter animals, impairs their power to accomplish the thing for which they are to be kept, namely, the making of milk and butter. Meat, not milk or butter, is what they will over after make. They will "take better care of themselves than of their owners."

GESTATION CALENDAR.

"Greenhorn" sends the following: "I have a register this year for the first time; here it is."

Cow 1—	Served May 31.	Calved March 12*	
2—	June 9.		22†
3—	July 22.	May	6‡
4—	Aug. 4.	May	25§
Mare	May 18.	Foaled April	20¶

* Three days late, † Two days late; ‡ Six days late; § Twelve days late; ¶ Two days early.

We will be glad to receive similar calendars from any of our readers who have them.

Agriculture.

AMBER CANE FOR STOCK.

Amber cane makes a most excellent fodder for cattle and horses, when green, and also when cured if not suffered to grow too large. The only objection to cane as a cured fodder is the sharp, tough rind of the stalk. It, like corn fodder, is difficult to cure well. Containing a large amount of sap and sugar, it sours if not put up in moderate sized shocks. Cattle are very fond of it on account of its sweet juice. In the fall they will eat the whole stalks clean. We have seen them begin at the butt end and eat all to the last particle of seed, without dropping any part of it. Horses are also fond of it, as they always are of sweet food, but it should be fed sparingly to them, for the stomach of the horse cannot digest so large an amount of tough fibre as cattle eat. We have fed the cured stalks to horses after running them through a cutter, and cutting only three sixteenths of an inch in length, breaking the tough, sharp rind into shreds, and reducing all nearly to a pulp. In this condition horses take no harm from eating amber cane, and we have acquaintances who say they have fed the stalks in winter to horses without injury, and they seem to prefer the cane stalks to hay.

It should be planted at the same time as corn, and the soil should be pretty clean. It grows very slowly at first, until it gets rooted, and then rapidly. It requires cultivating to insure a good crop. If to be simply used as fodder, it should be cut when the seed heads begin to form; but if seed also, cut when the seed is in the dough state, and put up in moderate-sized shocks to cure in the field.

Amber seed is good food for horses, especially when ground. The rind of the seed is somewhat hard, and should be fed moderately if unground. But when well ground it has a value per 100 pounds about equal to corn. Dr. Collier, chemist to the department of Agriculture, analyzed these seeds and found them to contain—albuminoids, 9.98; fat, 4.60; carbo-hydrates, 71.56 per cent.; comparing very well with corn. He figured the value the same.

Where this cane is raised for making sugar and syrup, it is very common to feed the seed heads to stock, and thresh the seed and grind for horse or cattle food. It is excellent when ground for fattening hogs. Three to five tons of cured fodder, and 25 to 40 bushels of seed, may be raised per acre. —*Live Stock Journal.*

HINTS FOR ANY SEASON OF THE YEAR.

Plough deep and cultivate often. This will give a deep soil and it will insure it against drouth. Manure it in the fall and early winter. The earlier we manure after vegetation has entered its winter repose, the better crop. Do not be afraid to spread manure, even on twelve inches of snow. This part of farm labor can be done with less cost in the winter. Our time is less valuable, teams can do it easier, and the soil is less injured. Corn and potato ground should be prepared for the crop in the fall, then in the spring harrow often, even daily, morning and night, if possible; the oftener the surer the crop. If but once a day is practicable, then let it be done at night, not in the morning, and the later the better the results. Cultivation saves manure. Avoid the waste of fertility. Dew contains the most powerful fertilizing agents, and in the most available form, so we should cultivate to receive the most benefit. Never manure very heavy, but a little and often. Feed as the plant needs. Do not feed the soil this year for next year's crop. In this respect let us treat our land as we treat our animals. Every farmer should understand something of agricultural chemistry, botany and physiology. Successful farming requires that plants should be fed according to their necessity. Every species of plant contains peculiar elements in its make-up, so we should supply the deficiencies of any to the soil. Quality of feed influences quality of product. Fertility removed in the crop should be returned in the fertilizer. The fertility of the soil depends both upon manure and its mechanical texture. There are three sources of fertility—soil, air and water. To know how to farm it so as to derive the greatest benefit from the atmosphere and water (by the way of rains and dews) involves a knowledge of Nature's laws above that which the average farmer possesses. Farmers, educate yourselves.

A CHEAP AND DURABLE ROLLER.

A correspondent of the *Ohio Farmer* gives the following directions for making a roller:

Go to your hardware store and get four drive-wheels of a Buckeye mowing machine, at old-iron price. Drill twenty-three ¾ holes in the rim of each wheel; make the holes as near 4 inches apart as possible, as you will have to vary some on account of the knuckle on the rim of the wheels. Get an iron shaft 6 feet 9 inches long, 1¼ inches in diameter. Take 2x4 scantling, cut them 3 feet long for the staves, hollow the under side to fit the rim of the wheel, bevel the edges and round the back (you may have some