

(Bringing Water from a Distance.)

To the Editor of the CANADA FARMER.

SIR,—I have a stream of water, distant about 2,000 feet from my house. The water would have to come up a grade of about 30 feet. Please give an estimate of how much it would take to complete the job, and what kind of a forcing machine would be best.

Camilla, Ont.

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The hydraulic ram, which has before been described in the CANADA FARMER, is the best thing we know of. The ram itself is a very simple and inexpensive affair, ranging in price from \$9 upwards according to size. The other expense would depend upon the size and material of the 2,000 feet of pipe wanted. Lead is by far the best material, and, in our climate, the pipes must be laid beyond the reach of frost, say four feet or more under ground. Trouble will arise if the rise is not made continuous, as gas and air will accumulate in the higher portion. So long as the rise is continuous, the pipes can be laid to follow the contour of the ground. A half inch pipe would probably be quite large enough.

The expense will so depend upon local circumstances that we can give no estimate. Our correspondent will be able to form an opinion from the information we have given. We have not the address of the makers of the hydraulic ram by us. Any agricultural implement firm will be able to supply the ram.

A Successful Agricultural College Farmer.

One of the three persons (we believe three is the whole number) who have passed through the course of the Iowa Agricultural College, and are now farmers, publishes his year's farming accounts. The CANADA FARMER is always glad to give credit where credit is due, and as we have animadverted heretofore upon the management of Agricultural Colleges in the United States, we want to be fair and give both sides. The statement runs thus:—

"D A Kent graduated at the Iowa Agricultural College, in November, 1873, and in 1874 farmed in Iowa, having thirty acres in corn, twenty in flax, twenty in wheat, ten in oats, and one in garden crops. He raised fifteen calves and fifty pigs. He makes a showing of sales amounting to \$1,812.50; of which, however, \$877.50 were obtained by crediting corn with sixty-five cents a bushel when fed to hogs. His direct expenses for hired labor, etc., were \$101.25, leaving \$1,711.25 as the gross return for his labor and the product of the farm. The land was badly run down."

It is probable that, if this account was thoroughly overhauled, it would turn out not to be so very unheard of a success,—but let it pass. The College only received 240,000 acres of land as an endowment. If too captious a view of the matter be taken, the account will never be balanced at all.

SOME interesting contributions to climatology have been made by M. Hofmann, during a journey through Italy. He found from numerous data that a difference of latitude of 1° corresponds in general to an acceleration or retardation of the development of vegetation about three days and three-quarters. M. Hofmann considered twelve different plants, which, growing at railway stations, were specially suitable for the investigation. The generally received notion on the American continent is that summer advances northward in steps of about twelve miles a day; and we have seen numerous and flowery editorial statements of the fact. M. Hofmann's observations tend to show that, in Europe, summer gets northward more quickly than it does here by four miles a day. There is one consolation. If the European summer can discount ours in the race to the North Pole, our Canadian winter can sling the snow in the face of his European brother in his race southward.

AT THE monthly Farmers' Club meeting held during the Smithfield Show week in London, the subject under discussion being, "The Future of Farming," Alderman Mechi said that, "on his own farm and many others which he could name, the amount of produce was such, that he was convinced that, if the whole of the land of England were farmed as it ought to be, taking the present rate of consumption, not one-half of the produce could be consumed, supposing there were no foreign importation whatever." At which the farmers present laughed irreverently. The Alderman continued and said that he could produce plenty

of men connected with Norfolk and Lincolnshire who would bear out that statement. "If the farmers of England as a body produced what was produced by some of the farmers of those two counties, the people of this country would not, at the present rate of consumption, consume one-half of the total, without any foreign importation." The report does not state whether the laughter was repeated.

A Talk about Farm-Buildings.

At the Western New York Farmers' Club, the subject of "Farm-Buildings" came on for discussion. Willard Hedges doubted whether painting shingle roofs was advisable. He read an article condemning the practice, as it caused water to remain longer under the shingles. Mr. Beckwith said old fashioned riven shingles have been superseded by cut or sawed, which are open to receive rain. The "fuzz" left by the saw draws the water under the shingle, where it is retained, causing rot. I advise using very narrow roof boards, with wide spaces between.

Mr. Reed. In Wheatland there is a house sixty-eight years old, the first frame dwelling in town, whose original roof still does good service. The roof was made of riven shingles.

Mr. Root said his house, built nineteen years ago, had a very flat roof, and though he used cut shingles it was now as good as ever. The roof was painted as laid, and again after laying, and the paint had not worn off.

Mr. Holten had laid a very flat roof, half with cedar and half with pine shingles. Gave it two coatings of linseed oil after laying, and after the last covered with fine sand while the oil was moist. This was twenty-five years ago, and the roof remains perfectly tight. Much of the sand remains on the shingles. There is now probably other roofing material better than shingles.

Mr. Quimby spoke of the superiority of Pennsylvania barns. All have cellars for roots, for cattle and for horses. Their houses are generally inferior, and men say laughingly that the farmers care more for their horses than for their wives. All barns, even on level ground, should have basements beneath. It takes no more roofing to cover a high barn than a low one. Most farmers after building find that they have made their barns too low. Then, the granary should be attended to. Not one granary in ten is rat and mouse proof. Yet it is easy to keep vermin out by using 1½-inch matched hemlock boards. The hemlock splinters cannot be eaten through by rats or mice. The pig-sty should be made with reference to the convenience of the service. Hogs are naturally very neat animals, and if furnished separate apartments will never soil their bed or feeding room. The trough should be divided into apartments, to give room for each animal without crowding its neighbor.

Mr. Beckwith made an excellent and cheap corn-house of an old hay-barn by making the crib inside with slats raised from the floor, and providing an open space between the crib and the side of the barn for ventilation. This plan secures perfect protection for the corn from snow and rain.

Mr. Ganetsee exhibited a grooved roofing made in sections, which can be used equally well for siding. It appears to be a good thing, and a committee was appointed to examine, and report at next meeting.

Mr. Ross said that when young he was much troubled by inconvenient barns and other out-buildings. This set him to thinking on the subject, and he had at last succeeded in perfecting his ideas in most particulars. Much depends on the location of buildings for convenience. Barns should be in rear of the house, with driveway and horse-block. He built a barn 36 by 78 feet, with horse-barn 36 by 50 feet, forming an L. It has a cistern 26 feet long and 10 feet deep, which had never been dry. His horses and cattle are all on the same floor, and he can water and feed them without going out of the barn. Has his granary in a small building outside the main barn. This was on pillars, with tins to keep out mice. The main barn was thus saved for storing grain and hay from the basement to the roof. Cellars should be made under the whole house. It costs little more than to dig a foundation, and plenty of cellar room is always handy. He kept his sills from dry rot by ventilating the basement with horse-shoe tile.

THE ENGLISH Agricultural press is again taking up the advisability of the appointment of a Minister of Agriculture. The North British Agriculturist says:—"The agricultural interest has grown so vastly in national importance that few, if any, can deny it merits a direct voice in the Government. There ought to be a department of agriculture and a responsible head. Commerce has been linked to Agriculture in the recommendation of the Central Chamber, and perhaps the two interests may be, in this respect, advantageously combined, though commerce has not hitherto been so inadequately represented in the councils of the nation as agriculture."

THE PERUVIAN GOVERNMENT have entered into an important contract with Messrs. Dreyfus, Brothers & Co., by which all the guano warehoused in Europe, and which was on the sea prior to the 31st March last, became their exclusive property. Further, in consideration of fulfilling the obligations of the Peruvian debt up to July, 1875, the contractors are to maintain exclusive possession of the whole remaining stock of guano, and be allowed sixteen months time to sell it, during which time the Peruvian Government will be entirely excluded from the market. This is important to the creditors of the Republic, as it gives the contractors a prior claim, notwithstanding the clause of the general bond.

A HIGH COMPLIMENT was recently paid to Mr. T. C. Booth, the famous Short-horn breeder, of Warlaby. A testimonial was presented to him of the value of 230 guineas. It comprised a gold watch and guard, a silver soup tureen, four silver corner dishes, a dozen silver dessert-knives and forks, and a silver fish-carver, and fork, together with a gold bracelet, mounted with pearls, for Mrs. Booth. On the watch and tureen was the following inscription: "Presented to Thomas Christopher Booth, Esq., by his friends and neighbors, as a grateful record of his kindness in allowing them the privilege of using the celebrated Warlaby bulls, thereby largely contributing to the improvement and value of their stock; also as an expression of their most sincere respect and esteem. 20th November, 1874."

AS FAR BACK AS 1824, M. F. Edwards was led to conclude that the complete development of the frog could not take place in the absence of light. Other observers, however, arrived at different results from their experiments, and the question is still fairly open to discussion. A contribution to this subject has recently been made by Prof. Schnetzler, of Lausanne, in the shape of an interesting paper, entitled "De l'Influence de la Lumière sur le Développement des Larves de Grenouilles." The eggs of the common frog (*Rana temporaria*) were taken from a pond last March, some being placed in vessels of colorless glass, and some in those of green glass, whilst in other respects they were exposed, as far as possible, to similar physical conditions. These comparative experiments showed that the development of the tadpole was greatly retarded by the green light. The writer is disposed to connect this imperfect growth with the want of ozone, experiments having shown that, whilst ozone was present in the white vessel, no traces of it could be found in the green glass.

THE TRIALS instituted by the Royal Agricultural Society respecting the Potato Disease have resulted, as was to be expected, in showing that not one of the so-called disease-proof sorts has, in reality, resisted the disease. During the period of vigorous growth, in all the varieties, in five out of the twenty localities the disease was virulent, and by the end of the season it was found that in almost all these places more or less disease was apparent; so that the question of disease-proof potatoes, as far as these trials are concerned, has been practically decided in the first year. Some most important communications have, however, been received from Professor De Bary, who has ascertained, by recent experiments, that the potato disease is not propagated by infested tubers; and that, although the mycelium of the fungus (*Peronospora infestans*) was distinctly apparent in the stalks of plants raised directly from diseased tubers, no gonidia, or germs, were evolved. In a latter communication, Professor De Bary expresses sanguine hopes that he has at last discovered the certain *nidi*, or resting places, of the oospores, or active primary germs of the fungus, which, as he says, would essentially complete its life-history. The great practical results of these discoveries, if perfected, will obviously be that measures may be taken to destroy *in situ* the oospores of the fungus.