

twice over, using a mill with a screen on the hopper and a second on the bottom. Plenty of wind is used on the mill, and anything small or useful that goes over is either kept for fowl or ground up for feed. All the whole oats that are fed, amounting to hundreds of bushels, are double screened also, and the small grain and seeds taken to mills and ground up like flour. We recommend this plan, as the yield of wild seeds is practically nothing. We might also say that very little manure is applied until it is thoroughly rotted.

Ontario Co., Ont.

G. H. N.

[Note.—It is not necessary to change seed if extra good seed of the variety is still on hand, but it is advisable to sow the best seed, and if it is not available in your bins it is good practice to buy.—Editor.]

More Interest in Birds.

Editor "The Farmer's Advocate":

Being a constant reader of "The Farmer's Advocate" I always find very valuable and enjoyable reading in the columns entitled "Nature's Diary." Anyone who has read these columns in your issue of February 12th, cannot but see the value of our so-much-hated hawks and owls. What a terrible misfortune if parts of this country should be visited by plagues of mice, and yet like the people of France, Scotland, and other such countries, the people of Canada through ignorance are in a great many sections working out a sure way for the ruination of their own farms and homes.

Indeed, take almost any of our Canadian birds. With a very few exceptions, can we not point out that these birds do exceedingly more good than harm to our communities? Those that do not eat such pests as field mice, etc., live on injurious insects and weed seeds. How is it that in many parts of the country weeds are increasing so rapidly, and weed inspectors have to be appointed in an endeavor to stop the increase and spread thereof? I feel certain that if the weed-seed-eating birds were encouraged to stay around and build their nests in the trees and orchards, the people would be commencing in the right place to eradicate and stamp out many an unnecessary farm weed.

In some parts of the United States the value of birds is being considered carefully, and in many localities organizations are being formed for bird protection. The people interested erect bird houses, baths, and feeding places for winter birds especially, thus encouraging them around their homes. Would it not be a good New Year's resolution to be made by every farmer and his children to care for the welfare of the birds? It is not necessary to spend time erecting bird houses, but we can do a great deal by keeping cats away from the nests in nesting time, and educating children to care for birds. How many valuable and beautiful birds are killed by thoughtless children carrying rifles about with them, or throwing stones at those which seem to be less afraid and heedless of their presence? Why not place good bird books on the shelves of our school libraries, and encourage children and parents to read and study them rather than useless novels and stories? Bird study by book and field glass cannot help but be good for anyone, and it will be a wonderful step in the advancement of our country and its welfare.

Elgin Co., Ont.

VOICE OF NATURE.

For Those Intending to Build a House.

Editor "The Farmer's Advocate":

The first requisite in building a house is to have it convenient to the barn—100 feet from the barn is a good distance. A farmer makes at least over 1,100 journeys to the barn in the course of one year, and if the house is placed 200 feet from the barn in place of 100 feet, he will do a little over 20 miles of unnecessary walking every year. Farmers usually get plenty of exercise at their work, so they don't require to take walks like city folks.

Of what material are you going to build? We built a stone house. It looks remarkably well. It is [very cool in hot weather, and], as it is strapped and lathed, it is dry, but when the frost gets into the walls, it takes quite a few days to come out. A stone house is very expensive—costs a good deal more than a brick or frame house, even if one has all the stones on the farm. A veneered brick is a very good house, if the outside of the studding is lined with matched lumber and every brick flushed with mortar right through. A solid brick house is a desirable building, if it is strapped and lathed and plenty of mortar used in the brick laying, and then a good heavy coat of plaster put on the inside before the strapping is put on. A cement-block house is not [expensive and looks well if properly put up and strapped and lathed. A stucco or cement house is satisfactory if steel lath is used outside and the work properly done, and a frame house is dry and warm if the

studding is lined [on both sides with matched lumber and then two-ply of building paper is put on the outside and finished with rybatted clap-board siding free from sap wood, large knots or shakes. Of course, owing to the increased cost of paint and oil, it costs something to re-paint a house of this kind every ten years, but then one can have a change of color each time and the house looks like new.

A great many farmers have built houses much too large. Capital thus used is unproductive. If the farmer builds a large barn, there is, or should be, an increased return from the stock, which will do better in comfortable quarters, with plenty of room, but when he builds a needlessly large, expensive house, there is considerable unproductive capital and a great increase of cost in heating the house in winter and much needless work for the ladies in keeping unused rooms clean and in order. A good farmhouse for a 100-acre farm should be built for from \$2,000 to \$3,000. It should have a dining-room, parlor, kitchen, pantry and bathroom and four or five bedrooms. The first three should not be too large. Our diningroom is 16 feet 6 inches by 18 feet 6 inches, and is too large—takes too much to heat it. There should be folding doors between the diningroom and parlor, so that they can be thrown into one for special occasions. The ceilings should not be too high. There is a house on the road on which I live with 12-foot ceilings. This is a mistake, as nine feet is quite sufficient. The cellar should be the full size of the house, and should have a milk room, a room for apples, another for potatoes, and a laundry room with a soft-water cistern and a drain with 6-inch glazed tile, with good fall, to take the dirty water away. All the washing of clothes, harness, etc., can be done in this room with comfort. I would not shingle a good house, but would put on either slate or galvanized roofing. The chimneys should have nine-inch tile built in for flues.

People's tastes differ very much, and the plan that would suit one will not suit another, but every house ought to be arranged so that it will be handy and save as many steps as possible. Speaking of steps, I have seen some good houses have several steps between the kitchen and diningroom. Now, this is a dreadful mistake—all the rooms on one floor should be on one level.

Oxford Co., Ont.

D. L.

(Note.—One hundred feet seems close enough to the house.—Editor.)

To Remedy Root Pulper and Lantern Troubles.

Editor "The Farmer's Advocate":

As this is the season when root pulpers and lanterns are in daily use, I would like to score them down a little in your excellent journal. To my mind the perfect pulper or shredder has yet to be put on the market. Shredders probably do the work faster than pulpers, but the chop cannot be mixed as readily nor as uniformly with shredded as with pulped roots, neither does the chop stick as well to the former, thus possibly occasioning some waste. But the great fault with all pulpers and shredders we have seen is that the roots will not feed without assistance by hand; the operator thus losing much valuable time and being in danger of losing a still more valuable finger. I wish to suggest a simple device for feeding roots to a cylinder pulper or shredder, which all pulper manufacturers may simultaneously adopt, thus barring individuals from obtaining patent monopolies. The feed consists of a second cylinder in the pulper or shredder, as the case may be, similar to the first, but turning in the opposite direction and at about half the speed. The difference in speed would keep it from choking; the two cylinders being placed on a level side by side.

Farm stock and buildings representing thousands of dollars are daily at the mercy of a 75-cent lantern, which is made of a few scraps of tin soldered together in the most flimsy manner, reminding one of Christmas toys which are not supposed to last more than a few days. The tubes crack with the first breeze to which they are exposed. We have tried boiling them all day with some success. Why do the manufacturers not put a "boiled lantern tube" on the market? By the way, a manager of some lantern concern stated some two years ago that we were to have unbreakable lantern tubes. As we have not seen them advertised in "The Farmer's Advocate" we may fairly assume they have never materialized. The in-take is far too small. The hole should be at least one inch clear. There are many devices for allowing the lantern to be lit. We have yet to see the perfect one. The handle should be so put on as to always remain in an upright position, so that the lantern may be quickly and safely hung up in a high, conspicuous place in the stable. Yet in many lanterns the handle is liable to pull out at any moment, allowing the light to fall in the straw or chaff, endangering a general conflagration.

Victoria Co., Ont.

J. F. TRUMAN.

Laying Large Tile Through Quicksand.

Editor "The Farmer's Advocate":

This main ditch was dug during the month of October, 1913, at the Ontario Agricultural College, Guelph.

Beginning at the outlet as we always do, we cemented the first twenty or thirty tile together. We practically enclosed them in two inches of cement. We put about two inches of cement in the ditch before laying down the tile, then we covered them with cement, after which we put a face around the first tile, bringing the face up a little more than level with the surface of the ground. In this way the spring floods will not wash away the tile at the outlet.

No cracked tile were used and no bad looking tile were placed in the ditch. We deemed it advisable to use nothing but the best, because we were particularly anxious to make a permanent job. We knew that intermittently for over a period of thirty years or more, someone had attempted to drain this particular piece of land. We also knew that they had failed in every case. Consequently, we looked after every little detail just so far as we knew. For instance, most tile layers fit the tile so that the tile appears well laid when looking down from the top, but if we could only see the lower side, turned up, we would almost invariably find large cracks or openings. In short, most tile layers fit the tile from the top almost entirely regardless of the bottom.

We fitted the tile all around in just so far as we possibly could, but if we found there must be an opening, we turned that opening upwards and made a mark on the edge of the ditch. Then after we had laid a hundred rods or more of these fourteen-inch tile, we would come along with a horse and rig and cement shut all the open cracks. Wherever we had a mark we put cement on the joint.

Each tile was separately put in position with a crowbar. The bar would be jabbed down into the bottom of the ditch right near the tile, then repeatedly jolted squarely against the end of the tile. The bar would be used in this way until every tile seemed perfectly firm for at least about ten feet back. Now, with all the tile laid in this way, and with all bad joints turned upwards and cemented, we felt sure that we were putting in a permanent drain.

But that was not all; we were told that sand would get in the joints even so, for we were laying these tile four or five feet deep, in what had always been known to be the very worst of pure quicksand. However, quicksand is only quicksand when it is wet. It is not called quicksand when it is dry. Fortunately for us our sand was dry. The bottom of our ditch was made up of almost two feet of extremely fine, dry white sand. Thus we might expect some sand to get in the tile, even though they were well laid. In order to overcome this difficulty, we thought it wise to take some precaution and just so we suggested sand traps.

These traps or silt basins, as they are sometimes called, were put in about 800 feet apart. We tried to have these traps placed where they would (not) interfere with seeding and harvesting operations. Each sand trap was made of cement.

In making the trap we first dug a hole about four feet square and about two or more feet below the bottom of the tile. This made our excavation over six feet deep and four feet square. Then we made a collapsible inside frame, which could be taken out and used in making different traps. This frame was three feet square and when set in the hole it just came up even with the surface of the ground. Thus we had an open space between our frame and the ground of about six inches.

In mixing cement we used very fine gravel or coarse sand. This was mixed with the cement at the ratio of five to one. Now, we fitted the tile securely up against the frame and poured in the cement until it came up even with the surface of the ground. Before the cement became hardened we placed several irons (harrow teeth with bolts upward) into the cement. The trap is covered with boiler plate about one-quarter inch thick. The plate is held in position by the projecting bolts. In this way the cover can be securely fastened and at the same time it can be lifted in order to inspect the trap. If sand or sediment collects, it can easily be cleaned out with a spoon shovel and thus save the drains from becoming clogged.

Two weeks after this main was put in, the sand trap contained over 10 cubic feet of sand. This sand was sand that had gotten in while laying the tile and would probably have remained somewhere in the tile had it not been for the trap. However, it was noticed that after the