

marry early: His inability to obtain a satisfactory settlement from his father, who too often persists in staying on his broad acres, "running the ranch," and making his son work hard for nothing by threats of disinheritance if he leaves—a system which, for the good of the country, I think, cannot be too strongly condemned.

Perth Co., Ont.

J. H. BURNS.

Experience with Quicksand Well.

A New York State farmer has driven a well at his barn. It goes into quicksand. The well is about 18 feet deep. In spite of all they could do in the way of sieves, etc., the fine sand comes in and soon makes trouble. The pipe was taken up and driven into another place, but with no better results. I do not know of any way of keeping this fine sand out under these circumstances. When the water flows in horizontally the sand will come in with it. I think you will have to dig a well. We dug one at the barn in quicksand and had considerable trouble with it at first. It has worked all right for the past fifteen years. The plan followed was to wall the outside so no water or sand could run in horizontally. The water must come up from the bottom. The well goes down some three feet or more in the sand, which was as far as we could get on account of water coming in so fast. I cribbed it with lumber and laid a stone wall, but it didn't work. Sand soon came through. At last I put in large sewer pipe, and now it is all right. If going at it again I should stand a length of sewer pipe on the quicksand, when it was reached, and then dig out inside of it and lower it. If more than one length was needed, cement another on top and go on. A small boy can do the digging best. The sand can be drawn out in a pail and the water pumped. There should be a rope around under the arms of the boy for safety. It is not a pleasant job, by any means. The expert I had left the well for good when he began to sink. I finished it. There need be no danger whatever if one keeps his wits about him. He mustn't stand still on both feet at once. Now, I do not know whether a sewer pipe would stop settling when one stopped digging or not. I think it would. The undisturbed sand is pretty solid. We had a plank wheel under stone wall, and put sewer pipe down inside so it rests on this same wheel that projects inside the stone wall. It would not be so easy to dig under and let the pipe down with a wheel under it. In the absence of sewer pipe, bricks can be laid in cement mortar on a wheel and let down by digging under, adding more bricks as needed. Water will come through the bricks. With us sand has not raised above the bottom of well after water was kept from coming in through the sides.—[T. B. Terry, in Practical Farmer.]

[Note.—Reference was made in the last issue of the "Farmer's Advocate" to the successful use of coarse gravel packing behind the brick as a means of excluding quicksand. We trust some of our readers who have been able to secure good wells in quicksand will relate for the benefit of others how it was done.—Editor.]

Testing Galvanized Wire.

The railroads and others who use wire largely are not like the farmers, willing to buy galvanized wire without knowing what kind of galvanizing they are getting. A U. S. wire company writes a New York paper, stating that they sell large amounts of wire to a certain railroad company, subject to test as follows:

All galvanizing shall consist of an even coating of zinc, which shall withstand an immersion test in a solution of commercial sulphate of copper crystals and water, the specific gravity of which shall be 1.185 and the temperature 60 to 70 degrees F. After each solution the sample shall be washed immediately in water and be wiped dry. If the zinc is removed or a copper-colored deposit is formed after the fourth immersion, that lot of material must be rejected.

It was found to be almost impossible to comply with this stringent specification, and finally the specification was modified so that the test should be two one-minute immersions, the wire to be wiped dry after each immersion.

Specific gravity 1.185 means that the solution is heavier than water in the proportion of 1.185 to 1.000, or about the weight of ordinary milk. We presume any physician who is accustomed to testing liquids could put the farmer who is disposed to use this test in the way of getting an instrument which would indicate the required specific gravity.

If the farmers will insist on having fairly good galvanized steel wire they will get it, just as the railroads do, just as the telephone companies do; and if they have to pay a little higher price for it they have no right to complain. If a man buys anything without looking carefully after the quality, he must not complain if he gets poor truck and pays too much for his whistle.

On the subject of barbed wire, we have recently been noticing a yard fence we put up about

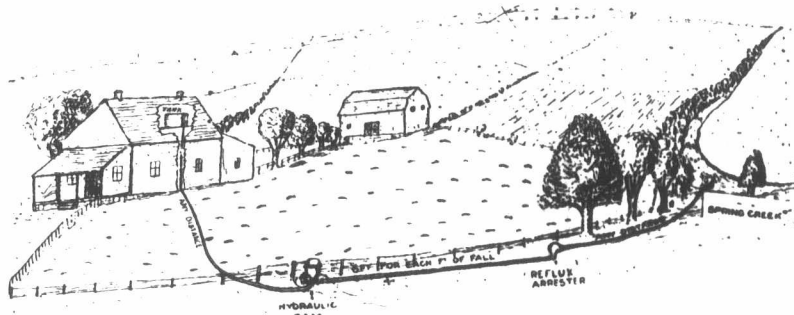
five years ago. The wire was said to be of the best quality. The three lower strands, which in the summer season are touched by the grass in the yard, have all retained their galvanizing. The rest are very badly rusted.

We mention this to jog our readers' memories to answer the questions propounded recently. Is it a fact, as suggested to us by an expert from the Department of Agriculture at Washington, that wires which are more or less covered by grass rust less than those which are not thus in contact with grass or weeds? Is it a fact that wires that have grown into trees do not rust for about eighteen inches on each side of the tree? We have received photographs of fence which showed this condition of things on particular fences. Is it general, and if so, why? These are questions we would like our readers to think about, and help us in the solution of this fence problem. There is a good deal to be learned on this whole subject, and the sooner farmers start in to study it the better for themselves and their pocketbooks.—[Prairie Farmer.]

Hydraulic Ram Plan.

I have a spring on side of hill which runs 2½ gallons water per minute. Amount of fall in 30 rods is 4 feet. (1) Would that run a ram? (2) Describe by drawing the ram in detail, and how it would be put in a barrel. (3) Give any other necessary information to put one in. (4) Is barrel best placed in spring or off a distance from it? (5) What proportion of water should be elevated 25 feet high? (6) Where can the best rams be procured. Distance to send the water, 25 rods, to elevation of 25 feet. R. B.

Ans.—In the circumstances here specified a hydraulic ram would work satisfactorily. It would be advisable, on account of the length of supply pipe, to make it somewhat larger than



The "Reflux Arrester" shown here is a special device sometimes used when the fall is slight compared with the horizontal distance from supply to machine.

A tank serves the same purpose, situated between supply and machine, in such a position that the pipe from tank to machine lies on a slope of about 1 in 6. Neither is necessary in this instance.

is usually specified. The supply pipe should be, I think, one inch in diameter. I enclose herewith a drawing, showing the relative positions of the supply of water, the supply pipe, the machine and the discharge pipe. It is not necessary to have a barrel or tank to contain the water at the spring, though, perhaps, it is generally advisable to do so. The water may be collected at the spring in a barrel or tank, and the supply pipe carries the water from the barrel to the machine. The supply pipe should not be perpendicular in any event, but laid on a slope of not more than one foot in six. In this particular instance the fall is four feet in three rods. This fall is sufficient to work the machine, provided, as I said above, the drive pipe is sufficiently large. It would be advisable, further, to lay the pipes, both the drive pipes and the discharge pipe, underground two or three feet deep at least, in order to lessen the danger of freezing in case the machine should stop working at any time during cold weather. Clean water, of course, is necessary—that is, water free from coarse matter which may clog the valves or pipes. There are many details respecting the working of the machine which can be learned only by experience. Anyone who handles a hydraulic ram soon learns to control the length of the stroke and other particulars. A machine having a water supply of four feet fall, and being required to lift water twenty-five feet, will deliver about ten per cent. of the amount supplied to it. The quantity of water mentioned by the correspondent, namely, two and a half gallons per minute, would run only the smallest size of machine—No. 2. The machine would probably pump about fifteen gallons per hour when working at its full capacity. As to the manufacturers of these machines, most of the windmill and power manufacturers handle them; also McDougall & Co., Galt, Ont.

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Results of Blue-stone Treatment of Weeds

To the Editor of the "Farmer's Advocate":

The species of mustard which Mr. Messenger sends me from Nova Scotia is not the common charlock (*Brassica hirsuta*) of Ontario (*Brassica sinapistrum*), but is rather the jointed or white charlock, or wild radish (*Raphanus lupanistrum*). I understand from my Nova Scotia correspondents that this wild radish is a common pest down by the sea.

The value of the blue-stone treatment of wild radish has not been clearly demonstrated. From one district I received a report that wild radish was killed as readily as wild mustard, and from many sections that the two-per-cent. solution of blue-stone had no effect whatever. These conflicting results may be due to variations in the hairiness and roughness of the plants in the different regions. In some instances the plants are fairly smooth, while in others the plants are covered with hairs. It is clear, then, that experience does not favor the use of this solution as a treatment for wild radish.

With regard to the application of the blue-stone solution on different species of mustards, I may state that, as a rule, the coarse, pubescent forms are more readily killed than those forms which are smooth and glaucous; yet we have some notable exceptions to this statement. For example, turnip and rape crops are readily injured by blue-stone. But this may be readily granted, for while a spray may injure, say ten per cent. of a cultivated crop and do much harm, yet this percentage would make the spray an effective destroyer of weeds. In our experience here we obtained the following results:

Wild Mustard.—Practically all destroyed with a two-per-cent. solution of blue-stone.

Worm-seed Mustard.—Only slightly affected.

Shepherd's Purse.—Root leaves were destroyed, but the stem leaves were only slightly affected.

Penny Cress or French Weed.—Only slightly injured.

One mustard of the West is a form of our *Brassica campestris*, another is the tall or tumbling mustard, both of which are not readily injured by blue-stone solution. In view of all the accumulated experience of ourselves and others in the treatment of the wild mustards, we do not recommend, nor have we recommended, the application of blue-stone to any but the common wild mustard or charlock. We have confidence in this treatment, for

we have made the treatment frequently. The application, however, must be thorough if you want to kill 100 per cent. of the plants in a badly-infested field.

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Price of Wheat and Flour.

To the Editor of the "Farmer's Advocate":

During the last few years, when the price of wheat advanced, it was noticed and felt that the price of flour was also raised. This was not objected to, but now, when the price of wheat is down, the flour still remains \$3 per cwt. Why does it not drop in price when the wheat does? Canadian people are willing to pay a reasonable price for what they buy—and that the very best—yet, it is a little too much when the price of flour is increased each time wheat is increased, and a firmly remains there while the wheat falls and rises again, when the flour will again make another step higher. Truly the motto for flourmen is "forward, advance!" sometimes in quality, but always in price.

When speaking of flour, why are most of the mills in the country discarding the stones and using the rollers instead? It is claimed a finer or better grade of flour is produced. From the authority of many medical doctors it has been proved that flour made by the stone process is better for one's health than that made by the more modern method. It has been discovered that flour made by the roller process aids in causing appendicitis. Is it not possible to make a high-quality flour by the stone process? If much of the health of the American people depends on manner in which flour is made, is it not their privilege and duty to demand and see that it is made the best way? In our seeking the new methods, let us keep hold of that which is best in the old.

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[Our correspondent is incorrect in stating that the price of flour always rises with an advance in wheat but never falls when wheat drops. The price of flour is more constant than that of wheat, as the greater or less stocks of grain always on hand have a conservative influence on our flour values. Then again, as an Ontario miller explains, small variations in wheat are not reflected in flour values, as it would be needlessly