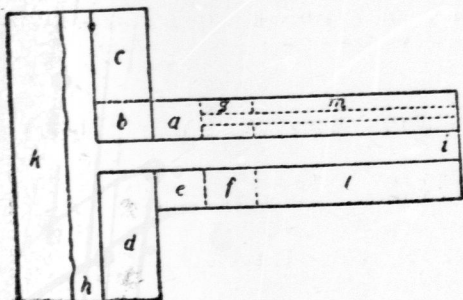


Farm-Garden

INEXPENSIVE GREENHOUSE.

The accompanying illustration shows the plan for a greenhouse which is cheap and gives a different temperature in various parts of the house, yet is heated with only one fire. The front part is ten feet wide and twenty-two feet long, and the rear part eight feet wide and twenty-two feet long. To build the house, dig in the ground two and a half feet, then set in oak posts eight feet long. This left the walls five feet high, except the south wall, which is only four feet high. This wall being low lets in plenty of sunshine. The framework is oak, consisting of three inches, and the walls are made of oak boards one inch thick. Then earth is banked up to the top of the wall, and sodded. The rafters on the south side are seven feet long; all the other rafters are

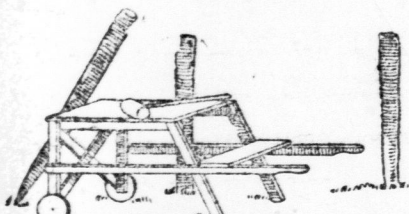


GROUND PLAN OF GREENHOUSE.

four and a half feet long. The letter a indicates the position of the stove, which is an old-fashioned wood heating stove. The legs are left off, and it is set on bricks so as to place it low down, and over it is built the cutting bench, the bottom of the bench being two feet from the top of the stove. A large pot of water is kept on the oven to maintain due moisture in the air. A large piece of sheet iron is placed between the stove and the wall; another piece is arranged so as to be easily moved in and out between the top of the stove and the bottom of the cutting bench. The dotted lines show where the flue passes from the stove. The flue is made of six-inch tile except one joint of stovetile next the stove. This tile is supported by strong galvanized wire fastened to the wall at one end, and to the rail on the flower bench at the other end. The joints of the tile are luted together with wet clay, which makes it easy to take them down for cleaning out the soot, which must be done about once a month in winter. The bench indicated by b and c is built high enough to allow two and one-half feet space under it, which gives room to get under to put wood in the stove; b is a bed of heliotrope, which is always in bloom, and c is where the carnations are grown for winter blooming. The fire is allowed to burn its full force only in zero weather, when it must be looked after every four hours. In moderately cold weather it may be left all night. There is always a difference of ten to twelve degrees between the middle and the ends of the greenhouse. As d is the rose bench, where roses are grown for cut flowers, a Marochal Noil being in the end nearest the fire. The bench is two feet high; e is the place for begonias and young palms; f, smilax, the bench low down; g, coleus, begonias, etc.; h, a large palm; i, a tall plant. All the benches k, l, and m, are used for plants for sale. The walls are two feet wide. The door is in the west end, and a storm door is built outside. I did all the work myself and the greenhouse cost me fifty dollars. With a few cold frames in addition it will, if well managed, turn out \$200 to \$300 worth of plants and cut flowers per year. Still, if the purse will admit, build it on the level ground and do not dig. Use two thick pieces of board and put tarred paper between them as the building will then last much longer, will not be so damp in continued wet weather, and will then allow cold frames to be placed outside the east wall. A good drain is indispensable for a house built below the level of the ground.

Wheeled Platform for Driving Posts.

In driving fence posts a platform of some kind is required for the operator to stand upon when manipulating the sledge. This is usually a cumbersome box that is



MOVABLE FARM PLATFORM.

rolled and tumbled from one post to another as the work progresses, and if the ground be uneven the support is very unsteady and the work unnecessarily tiresome for the operator. It takes but little time to construct a wheeled platform like the one here shown. The top or platform three feet in length and two and a half feet wide and twenty-eight inches from the ground. The wheels should be six or eight inches in diameter and may be of wood or iron, the handles are four and a half feet long with a stop nailed on top of them as shown in the sketch. This arrangement will prove handy in gathering apples from the lower branches of the trees, and for many other purposes about the farm. It can be made from bits of boards and is easily moved about.

In the Orchard.

Fruit takes less from the land than any other crop, and usually is easier to grow than any other farm crop. The moral to this is to raise more fruit.

Gather up the windfall apples and feed them to the pigs regularly. Every such an apple has in it a worm that will make a codling moth next spring to do you damage.

By using early apples for making cider they can be turned into quite good vinegar before cold weather. The cider ferments much faster while the weather is hot. A little old vinegar to act as yeast will hasten this, and so also will a little yeast, sweetened so as to supplement any deficiency of sugar in the fruit. Most of the summer apples have too little sweetness to make the best vinegar unless sugar is added. The reason why cider is usually made late is because the work does not come at a hurrying time. But it would be better if cider were always made early; it would then become vinegar before winter and much less would then be drunk. The early apples are very quickly rotted if not cared for, and making them promptly into cider vinegar is the best means of disposing of such as are not saleable.

POULTRY FOR MARKET.

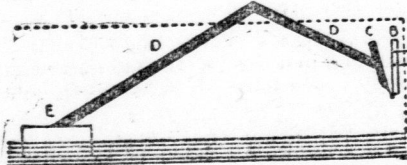
The production of choice market poultry—that which will bring the highest prices—is not difficult. Very few persons in a community know how to fatten poultry at the least cost. They give good care and provide proper food, but make mistakes in the mode of managing the fowls intended for the market. The practice of confining the fowls in coops is wrong, and so is the keeping of fowls singly in boxes to be fed frequently, for the reason that solitude or loss of liberty has a depressing effect on the birds and they lose appetite. The proper mode is to have a large yard or run and keep several fowls together. Feed three times a day, giving ground grain, scalded, in the morning, the same at noon, with a little ground bone and meat added, and corn and wheat at night. Feed them all they will eat at each meal and feed as early and late as possible, always having clean water in a convenient place for them. Treated in this manner a fowl thin in flesh can be made very fat in ten days or two weeks, and will not only bring an extra price per pound but will pay in the additional weight secured.

Feed the Stock Yourself.

I knew a farmer who would not trust the feeding of his cows, horses and pigs to everybody, no, not he. He took so keen an interest in all departments of his farm work, that no part of it was to him disagreeable. In farming we can do no better than to emulate the example of such men who are making agriculture successful by their own greatness of mind, applied to detail work. I regard the doing of the winter chores about the barns, pig-sties, and poultry houses as nearly half of the farming, since it lasts half of the year and involves the care and profit of all the live stock on the premises. What will swine amount to next summer if they don't have dry, warm quarters now, with substantial food? What will the wool clip on your farm amount to for 1905 if the sheep freeze to the ground at night, and pull out great patches from their fleeces, when they struggle to their feet winter mornings? And do you expect the heifer calf to make a No. 1 cow whose hair is kept turned toward her head, except when there comes a thaw?

Valve for Water Trough.

To keep a full supply of water in the cattle or poultry trough without being annoyed by surplus water overflow, and without giving the stock a chance to contaminate the main supply, lead the pipe from the spring run into a cask and arrange the overflow at the top of the cask. From the bottom of the cask run a small pipe to the trough and make a rubber valve which will work automatically as follows: A hole is bored in a block the exact size of the little pipe (A) and slipped on the pipe while dry. When it is wet it will swell and hold fast. A common wrought iron hinge of small size is next screwed on the block (B) and a square



REGULATOR FOR WATER FLOW.

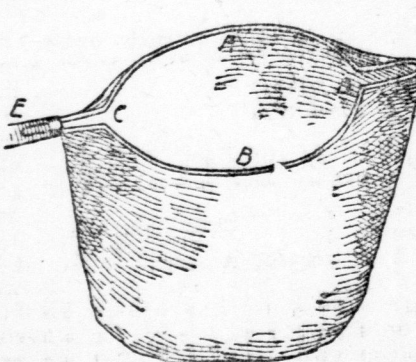
rubber boot (C) wired to it in such a way that it can be forced up against the end of the pipe cutting off the flow of water. This part of the hinge is in turn screwed to a forked stick with a small block (D) on its upper end. The block floats on the surface of the water and as the trough gets full enough it raises the stick, forces the rubber against the end of the pipe and stops the flow until the water is lowered by stock in the yard, allowing the float to let more water escape through the pipe. It works as well as a more expensive valve and on the same principle.

Raise Apples for Exportation.

Clarence Meeker, American Consul at Bradford, England, reports to Secretary of Agriculture Morton: "Fruits are imported from nearly all fruit-growing countries. The amount produced here is exceedingly small. At the same time the demand for fruit is continually growing, many physicians recommending the American custom of eating fruit for breakfast as exceedingly wholesome and the general consumption of fruit in season as healthful in every way. The climate and seasons in this part of England not being suitable for fruit culture, the people have, as a rule, any particular desire for it. The American apple, however, is in special demand here. The Newton Pippin is particularly popular. Immense quantities of these apples are shipped here every autumn. The Bradford fruiters get the American fruit from both London and Liverpool. Despite the great quantity received, the supply practically fails about the middle of February in each winter. At the present time the choice Newton Pippins and other winter apples command at retail about 5 or 6 cents each. If the high railroad rates which discriminate against fruits could be broken down, the consumption in almost all the interior cities would be quadrupled, and a great market would be thus opened.

Hand Apple Picker.

In connection with the winter apple picking the picker shown in the illustration will be found of great service in reaching the fruit on extended limbs. One man can stand under a tree and pick



FOR PICKING FRUIT WITHOUT BRUISING.

nearly all the fruit from the tree including the hardest to get at—that on the ends of the branches. The frame is made of heavy wire, or light round iron and a sack of heavy cloth sewn to the frame, leaving the slots at each end so that an apple will be free to enter the sack. Then all you have to do is to push or pull and the apple drops into the sack.

It is a bad habit to get to thinking that you can buy this product or that, which you need for use in your own family, as cheaply as you can grow it. Produce everything possible that is needed for home use, and so save the middleman's profit on both that which you would have to sell and that which you would have to buy. For if you do buy, you must grow some other thing with which to pay the bill, and some one beside yourself makes the profit on both transactions.

THE DAIRY

FEED FOR THE DAIRY.

It has been with much foreboding that dairymen are anticipating the gloomy prospect that confronts them. This time, and we need to help each other all we possibly can by word and practice.

Never have we experienced any season so difficult to keep up the normal flow of milk. Everything has combined to rob the cow of her perfect right to do her best under adverse circumstances, and she—the nervous, circumstantial creature that we have succeeded in transforming her into—promptly refuses to fill our vessels to replace the loss of her accustomed loads of succulent grass, but she presumes to draw the line at this season of the year against winter rations and cuts her daily output of milk into various fractional quantities. This decline, not only varies in different herds, but of the same herd has fallen off at a higher rate on the same kind and quantity of feed than others. This shows ability in individuals to resist the unnatural conditions that have befallen the dairies of this and other states this year. Such animals and their progeny are of greater value than those susceptible to ordinary and extraordinary changes, either from green to feed or sudden fall in temperature. These are practical features that enter in as prime factors which will enable careful dairymen to build up good paying herds of cows, and no one can afford to overlook their importance. It is just such seasons as the one that we are endeavoring to stave off through that affords us the opportunity to make selections and breed expressly for these cows for permanent betterment to our herds. It is a most excellent idea to be always ready for improvement and to grasp the opportunity when it presents itself. Opportunities are the exception and not the rule; hence it pays, when we find something out in the commonplace, especially in a cow, to give her free right of way on the farm, and she is bound to give reward for her care and keep.

I am safe in saying that no dairymen within the limit of my acquaintance and knowledge has been able to carry his cows through the past three months' drouths without sustaining considerable shortage in milk. Even owners of herds have fed full winter grain rations and still lost one-third in weight of milk on dry pasture, and where neglect has been practised, the shortage has fallen to one-half.

All this accrues from the fact that a backward spring, frost and drouth have conspired to keep back forage crops, especially fodder corn, which has been depended on for August and September dry periods.

I do not believe it is possible to keep any cow up to her normal flow of milk without some grain pasture during summer months. Not even ensilage, which one neighbor has been feeding the past six weeks, will reach the normal point as indicated by his returns, though it greatly improved over dry pasture. I have fully convinced myself that dried grass will not create butter fat, though it will keep the cow in milk, while cows in full milk will begin to slacken in milk and add flesh as the grass becomes drier.

Our creamery that made over 5,000 pounds of butter in May will not make more than 2,500 for August, and with at least seven-eighths of the cows fed a fair grain ration. J. F. Hickman writes in answer to inquiry as to how they kept up the flow of milk at the station:

"I do find that it is quite difficult to keep up the flow of milk without pasture. I have not been able to devise a plan of feeding which will keep the cows in good milking condition during these excessive dry spells. I think the cow is a little more like man than we have been giving her credit for. I am almost persuaded that she feels some of the weather, and I don't blame her for it. Thus I don't blame her for every opportunity to supply her needs the cows of the station at Wooster are faring much the same as those among the general dairymen of Ohio. There is but one means of retrenchment for the future—that of prompt preparation ahead so that a dry season similar to the one past will not catch us napping without green food to supply our needs. Rye sown now will supply us with the earliest possible pasture or soiling crop for spring until oats come into use when the rye is either gone or too old to use; the oats make a magnificent food for cows until fodder corn is of such age as to produce beneficial effects in sustaining a flow of milk. Rye is not the best food for enriching milk, yet if sustained by a fair quantity of grain in a balanced ration it will tide over a short period safely.

Our experience with oats for the two seasons past has been very satisfactory, fed both green and dry. In the latter condition it was run through the cutter and some bran thrown over it and moistened. The gain in bulk of milk was quite noticeable while the gain in percent of fat was very apparent, marking the period of oat feeding as worthy of further trial. In years past we have not been forced to feed so early of forage crops, so have only resorted to corn as a substitute for shortage in pastures; but it will be much safer if some means are brought into play for an earlier substitute to tide over such seasons as the two just past.

If the reputation of our herds, as well as their profit, is to be maintained, we must bear in mind that we are, as well as our cattle, creatures of circumstances, and must contribute our careful judgment toward meeting unexpected emergencies. "Eternal vigilance" must be the motto of the successful dairymen, and no great excellence is attained except by excessive labor." Carelessness, coupled with the kindred spirit of slothfulness, always steals away that part of the dairy receipts that we credit to profit. Why so many labor hard to reach the boundary of a profit, then relax their energy and allow the further opportunity of success to vanish. Don't do it. Push on and possess the dollar that is the easiest money earned in the conflict and gives the most pleasure when properly spent.

Experiments have shown that mild currents of electricity may have a beneficial effect on the growth of plants, but, of course, a heavy charge will kill a plant just as lightning will kill a tree.

THE SUNDAY SCHOOL.

LESSON IV, FOURTH QUARTER, INTERNATIONAL SERIES, OCT. 27.

Text of the Lesson, I Sam. iii, 1-13—Memory Verses, 1-4—Golden Text, I Sam. iii, 9—Commentary by the Rev. D. M. Stearns.

1. "And the child Samuel ministered unto the Lord." We have set forth in this book the blessings of submission and obedience and the opposite. Hannah, in the bitterness of her soul, looked unto the Lord, and He heard her and gave her this child. Therefore she called it Samuel, which means "asked of God" (chapter i, 20, margin). When she had weaned him, she returned him to the Lord (chapter i, 28, margin). Then she praised God in the beautiful words of chapter ii, 1-10. In this song we have the first use of the word "Messiah," translated "His anointed" (verse 10; see also verse 35). We have also in chapter i, 3, 11, the title "Lord of hosts" for the first time. Both of these titles suggest many things concerning the kingdom, and in this book, sometimes called "the first book of Kings," we have the story of the first two kings, one a man after the people's heart, the other a man after the Lord's heart.

2, 3. "Ere the lamp of God went out in the temple of the Lord, where the ark of God was." Eli was now old and was not walking before God in the matter of his sons, and very early in the morning the Lord came to talk with this child, Samuel, of whom it is written that he ministered unto the Lord, grew before the Lord, the Lord was with him and revealed Himself to Samuel in Shiloh by the word of the Lord (chapter ii, 11, 13, 21, 26; iii, 19, 21). See how even a child may minister unto the Lord and have a place in the Lord's house and receive messages from the Lord while older ones are passed by. Many things are still hidden from the wise and prudent and revealed unto babes (Math. xi, 25). The thing that greatly pleased God is to have "before Him" and "unto Him," seeking in all things "His glory."

4. "The Lord called Samuel, and he answered, Here am I." It is evident from verse 10 that He called him by name. This makes us think of that beautiful verse in Isa. xlii, 1: "Fear not, for I have redeemed thee. I have called thee by thy name; thou art mine." And also of Isa. vi, 8, where the Lord says: "Whom shall I send, and who will go for us?" And the prophet answers, "Here am I; send me." How beautiful to be ready for His every call, an ear always open to Him!

5. "And he ran unto Eli and said, Here am I, for thou calledst me." But Eli did not recognize that it was the Lord calling him and so told him to lie down again. Eli had not the ear for God which he should have had, and God saw it, and that He could communicate with him only through Samuel. It was a rare thing to get a word from the Lord in those days, and visions such as those granted to Abram and Jacob, Moses and Joshua were unknown. See verse i, R. V., margin.

6. "And the Lord called yet again, Samuel." Behold the patience of the Lord, Samuel's readiness and Eli's continued dullness. How difficult it often is for the Lord to get our ear and make known to us His will! What a contrast to "watching to see what He will say unto us," or "watching daily at His gates" (Hab. ii, 1; Prov. viii, 34).

7. "Now Samuel did not yet know the Lord; neither was the word of the Lord yet revealed unto him." He must have known the Lord through Moses and Joshua, but not yet by direct communication. Known means to perceive, understand, acknowledge, so there may easily be many degrees in knowledge. Paul said, "That I may know Him" (Phil. iii, 10), he certainly knew Him as Saviour and Lord, His wisdom and His righteousness, but he longed to know Him better.

8. "And the Lord called Samuel again the third time. And Eli perceived that the Lord had called the child." The third time did Samuel rise and go to Eli, belling that he called him. What unwearied obedience! What a blessed soul! When he would tell his mother of his experience and how he had acted, how glad she would be! I think this is the only instance of God speaking directly to a little boy, but all young and old may hear His voice in His written word (John vi, 69).

9. "If He call thee, say, Speak, Lord, for Thy servant heareth." Eli is by this time wide awake and also wide awake to the fact that the Lord has something to say, but not directly to him. It is probable that he remained awake till he heard the tidings, and then he would be more awake than ever. "Awake, thou that sleepest," is a good word for many of us. It would be wise also to say, "Speak, Lord, for Thy servant heareth," whenever we open our Bibles, and it would also be appropriate to add the prayer in Ps. cxix, 13.

10. "And the Lord came and stood and called as at other times, Samuel, Samuel." This is the fourth time that He came and called, suggesting the question, How often has He called us? And have we yet submissively said, "Speak, for Thy servant heareth?" The attitude of a servant is well described in these words: "Ready to do whatsoever my lord, the king, shall appoint." "For any manner of service, wholly at thy commandment" (II Sam. xv, 15; I Chron. xxviii, 21).

11-14. "And the Lord said to Samuel, Behold, I will do a thing in Israel at which both the ears of every one that heareth it shall tingle." And then follows the thing that He will do—a judgment upon the house of Eli, as told to Eli by a man of God some time before and fully recorded in chapter ii, 27-36. Mercy always precedes judgment, for God is slow to anger and plenteous in mercy. He had given Eli fair warning, but Eli had honored his sons above God (ii, 29). The law was very severe, but very plain concerning rebellious sons (Deut. xxi, 18-21), and the ruler who refused to see the law carried out because the transgressors happened to be his sons certainly thought more of his sons than of God. Only those who can truly serve the Lord who serve Him in "fear and in truth" (Joshua xxiv, 14), or, as our Lord Jesus said, "He that loveth father or mother, son or daughter, more than Me, is not worthy of Me" (Math. x, 37). In the morning Eli called Samuel and begged him to hide nothing from him that the Lord had said, so Samuel told him every whit and hid nothing. Eli certainly answered in the right spirit, for he said, "Is the Lord, let Him do what seemeth Him good" (verse 18). He makes us think of Job, who under his great affliction said: "The Lord gave and the Lord hath taken away. Blessed be the name of the Lord."

It may be that the faithfulness of Samuel in this hard matter to Eli was a step on the way to his being established as a prophet (verse 20). See in chapter iv, 17, the judgment fallen.

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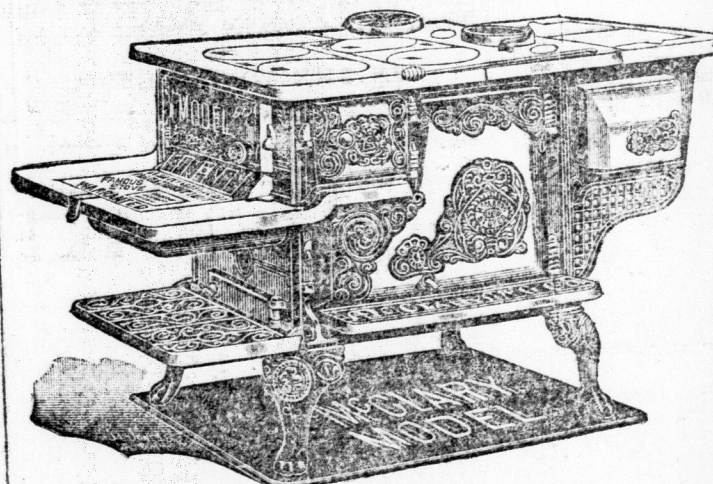
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