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Michigan State University Extension Service
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UTILIZING Poles and Timber in Farm Building



MICHIGAN AGRICULTURAL COLLEGE
Extension Division
R. J. Baldwin, Director

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UTILIZING POLES AND TIMBER IN FARM BUILDING

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The utilization of poles and timber in the construction of houses and farm buildings, in order to save capital for the development of the farm itself, is a matter of great importance for the man who is establishing a farm in a new country, such as the cut-over districts of northern Michigan.

While the majority of the farmers in these regions of Michigan are men who are at least somewhat familiar with timber and its handling, a survey shows that but a small percentage of them are using, or have used, the timber or resources at hand when making their farms. Money taken from the capital which should have gone into getting acres into production has often been spent for lumber and building material which could have been taken from the natural resources of the farm itself.

Millions of acres of land fit for agriculture, standing idle after the lumberman has taken his harvest, are gradually being brought under cultivation. Eventually this permanent agriculture, because it grows instead of decreasing, will become an industry much greater than even the vast lumbering industry which preceded it.

Making farms on cut-over areas is a task which is not all sunshine. Money, time, and work are required to develop the pioneer farm. The soil and climate are provided, and provided liberally, while the land in most cases can be bought cheaply and on good terms. Such regions are the one place where a man with little capital, but with a willingness to live in pioneer fashion for a few years, can make a good, productive farm and build himself a permanent home, which increases in value from year to year.

The conserving of capital for the proper development of the farm itself, however, is vital, and it is in this connection that the use of all available material must be considered. Experiences of those who have already made new farms in these regions, and the studies of universities and other agencies which have worked on these problems, point to methods which make the clearing of land and the building of homes both easier and cheaper than in the past. The Michigan Agricultural College has carried on investigational and educational work in land clearing and farm making in the cut-over regions of the state during recent years.

The suggestions that follow in this bulletin, on the use of available building material, are all taken from actual experience in the cut-over sections, where the methods have been used by men with little capital in the development of new farms.

It should be borne in mind that these suggestions are for temporary buildings or equipment. These buildings are designed to meet the needs of the present, while the major part of time and money is spent in getting the land cleared and the farm producing. Then, the log or pole buildings should be replaced with well planned and well built structures. The first log house should be so planned that when it has served its purpose, as a home, it can be used in the regular plan of the farm buildings in some other capacity.

When a piece of cut-over land has been bought and the building site selected, a survey of all standing timber should be made to discover what can be marketed, what can be best left for a wood lot, and which area can be cleared the most easily. To those who are not familiar with timber or its use, this is a problem. It is usually best to get the help of some experienced timber man in planning the disposal of any timber that can be used.

TIMBER ON NORTHERN MICHIGAN FARMS

Before good timber is cut to be used for pole or log buildings, or burned in clearing, its sale value as logs, cordwood, bolts or ties should be carefully investigated. The common trees found in northern Michigan and their uses are listed in the table below, taken from the U. S. D. A. Farmers' Bulletin No. 1123 and from "Selling Woodlot Products on Michigan Farms", issued by the U. S. Department of Agriculture and The Michigan Public Domain Commission respectively. Both of these bulletins should be studied before much timber is cut.

Northern Michigan Trees and Their Most Valuable Uses

Lumbe-	Handle stocks	Excelsior	Ties	Cooperage	Veneer logs	Poles, posts	Distillation	Pulpwood
Pine Ash Basswood Beech Birch Elm Maple Oak Walnut Hemlock	Ash Beech Birch Maple White Oak	Aspen Basswood Cotton wood Willow Yellow poplar Tamarack	Oak Cedar Tamarack Hemlock	Ash Basswood Beech Birch Elm Maple	Basswood Birch Beech Maple Walnut	Cedar	Beech Birch Maple	Spruce Balsam Tamarack Hemlock

CONSIDER BUILDING SITES CAREFULLY

When the general building site has been selected, the first thing for consideration is the home itself, around which all the activities of the farm must center. Care should be exercised in choosing a site for the

home so that the natural beauties and conveniences can be taken advantage of. It should be the aim of everyone beginning on a cut-over section of land to make the home as beautiful as possible. A little care in planning can make things much easier and pleasant for the wife and mother during the first years. This does not mean that the home must be elaborate. Too much stress can not be placed on the fact that, for the man with limited means, much money should not be taken for the first buildings. They should be comfortable enough to live in, but the capital should be used largely in getting a few acres under the plow and producing crops.

Before any building is done, the builder should have a well thought out plan in mind. The sites for the permanent house and barn should be decided upon, and the temporary log or pole buildings should be so located that, while they do not occupy the site on which the permanent buildings will be placed, they can still be used in the regular



Fig. 1.—A substantial pioneer farm home, made from material found on the farm. A coat of whitewash and a few flowers make it attractive.

plan of building, either as wings or as separate buildings, such as graneries, woodsheds, and the like.

There are a few important principles that should always be borne in mind when planning a farmstead. The buildings should be near the center of the farm, and near any natural water supply available. They should be on a slight elevation, dry and well drained, but not on high hills. Neither should the buildings be in a low valley, because of poor drainage and danger of frost. The house should be not less than 100 feet from the road, and the barn 150 to 200 feet from the house. The barn should preferably not be in the direction of prevailing winds. The feed lots should be on the side of the barn away from the house.

Flowers and shrubs, both wild and cultivated, grow profusely in nearly all cut-over districts, and a little effort spent in using these to

beautify the yard around the home will add much to the pleasure and contentment of the family. The accompanying photograph, Fig. 1, shows a very ordinary log house. Every foot of the lumber, with the exception of the doors and windows, was picked up from waste timber on the farm. With the whitewash and garden, it is made to look very homelike.

When the settler does not have enough capital to go ahead and put up his permanent buildings at once, there are numerous ways in which the first house on the new farm can be built. Probably the most common type is the old log house. There is nothing difficult in the erection of a log house. The logs should be of fair size, six inches or larger in diameter and straight. They should be, of course, as long as the room is to be. Anyone who has not lived in regions where log houses are common should before he starts work, see and examine as many houses as possible in the vicinity where he has selected his land. Then he should plan the

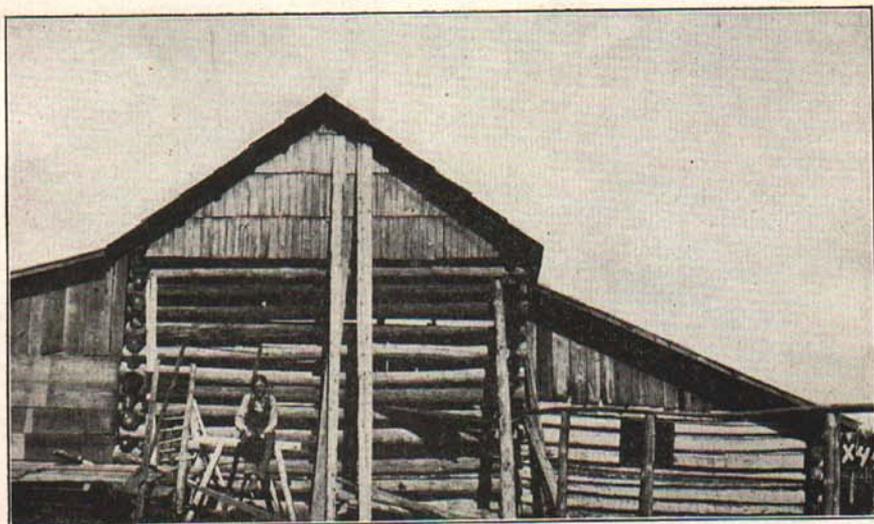


Fig. 2.—A log barn under construction—horse and cow barns on each side, with hay shed in middle, showing two methods of building up the wall.

house as to size and location, so that when the permanent home is built the log house can in some way be made use of.

The main difficulty in putting up a log house is in the amount of heavy work that is necessary. It is almost essential that there be more than one man on the job when the house is put up. The logs are heavy, and the work of handling, fitting, and placing them on the frames usually takes more than one man. Fig. 2 shows, in the same building, two methods of building up the walls of logs. In the center section, the logs are not hewn flat, and the ends are notched but very little. This leaves an opening, usually of two or more inches, between logs. If meant for any building such as a house or barn where the walls are to be weather-tight, this method means that the cracks must be chinked in

with smaller pieces, hewn to fit, before the plaster, mud, or mortar is applied. It leaves a rather crude wall and is not a very practical method where a tight wall is desired. This method is used very often when the building is to be used for a hay shed, corn crib, or other building where the openings between the logs do not have to be filled. It is, of course, quicker and easier than fitting the logs tight.

For ordinary buildings it is more satisfactory to notch the ends of the logs a little deeper, and, even if they are not hewn flat, enough of the bends, knots, etc., should be trimmed so that the logs fit fairly tight on one another. This makes the building more solid, and the wall can be made weather tight with very little additional time or work.

The most common way of building up the walls of log structures is shown on the addition at the right of the picture in Fig 2. Here the logs, while not all straight or of uniform size, have been hewn flat on the sides. The ends are notched deeply enough so that they fit closely

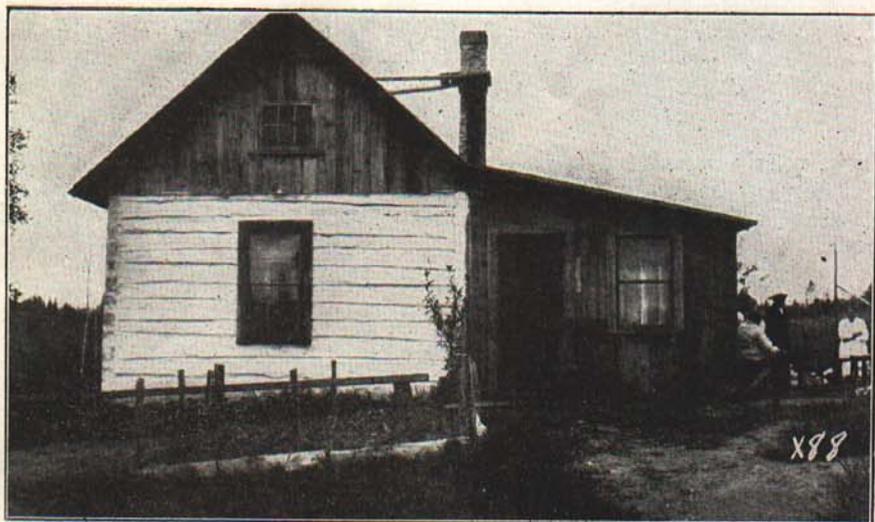


Fig. 3.—A log house with a kitchen lean-to of boards.

together and offer a comparatively smooth surface when finished. The logs directly below the window show how logs of uneven size at the butt and top can often be used. Usually the logs are cut to make room for the windows after the wall is up. Sometimes shorter logs are placed on each side of the window, and the window opening is made as the logs are framed. This makes it necessary to use more care, and often more work, to get the top smooth when the top of the window frame is reached, where another log must be fitted across the entire side. In earlier log buildings, wooden pins holding the logs together at the sides of the window and door frame were used, but in present-day construction a frame of two-by-six timber is nailed to the end of the logs and serves to hold them in place. One fault that is very common in building all log or pole buildings is that not enough windows are provided, dark

buildings resulting. The small additional time necessary to put in extra windows will be more than paid for in the advantages gained. A



Fig. 4.—A complete set of farm buildings near Republic, Michigan, built of logs and lumber sawed on the farm. The cost of these buildings, not counting the owner's labor, was about \$450. A better arrangement of the buildings would have added to the convenience of the farm and made possible better use of the log houses when permanent buildings were erected.

dark, poorly ventilated building is unhealthy, unpleasant, and undesirable for either humans or animals.

After the walls of the log house are built up to the height that is desired for the sides, the end rafters and roof must be planned. There are several methods of finishing up the roof. The gables can be made of logs by sawing or chopping the ends on a slant to fit under the end

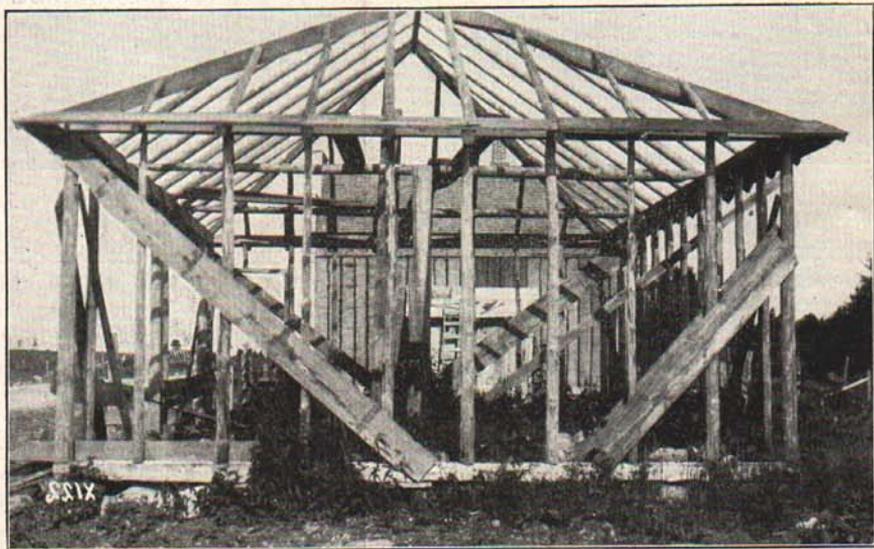


Fig. 5.—A frame-work of poles, 24 by 27 feet. One man peeled the poles and erected the frames in three days.

rafter. The end rafters are erected and the ridge pole placed before the gables are built. It is then easy to fit the log ends in place in building up the gable. Ridge poles and rafters can be made from poles cut on the farm.

Care should be taken that the poles are firm and in good condition, about three inches in diameter, and that the top side of the ridge pole and rafters is straight and smooth. This is essential in the ridge pole in order that the rafter poles, when fitted, will afford a continuous, even surface for the ridge boards.

A practical method of fitting the pole rafters to the ridge pole is shown in Fig. 5. While sometimes a ridge pole is not used, the ends of the rafters being sawed slanting to match at the ridge and nailed together, it is usually better practice to fit the rafters to a ridge pole. The result is a firmer, more solid, and straighter ridge on the roof. The pole rafters extending over the side wall from the eaves are shown in Fig. 5. They are notched and fitted over the plate stringers in the same manner as ordinary two-by-four rafters. Fig. 5 also illustrates what can be done with poles for roof and frame work. The entire frame was made by one man, of peeled poles about four inches in diameter. Three days

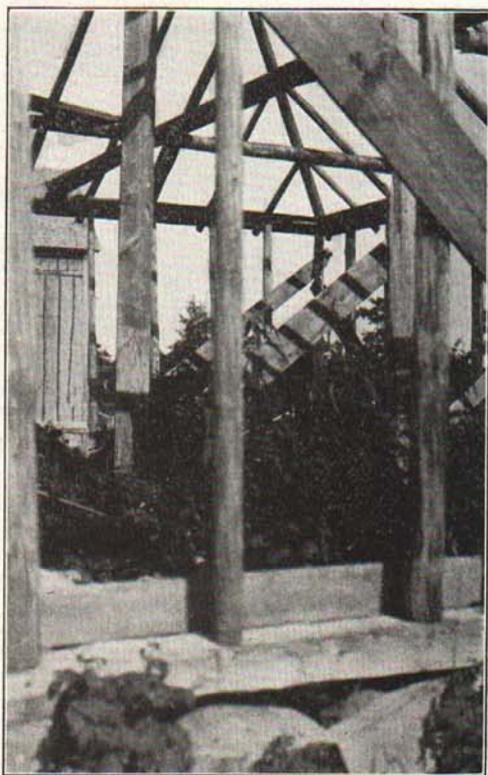


Fig. 6.—A corner of framework made from spruce and tamarack poles. The poles are toenailed to the hewn log used for a sill.

were required by him to peel the poles and put up the frame. Every pole was cut from his own farm and helped that much in the top clearing. The lumber necessary in this frame work would have cost about forty-eight dollars on the market, besides the cost of hauling it from town.

The ordinary log house roof is covered with rough lumber under prepared roofing, rather than shingles. Shingles can be made very satisfactorily by splitting cedar blocks sawed to the proper length if they are available on the farm. However, it is questionable if this pays if the money for asphalt felt or other low cost roofing can be obtained. In Fig. 2, two methods of covering the gable are shown. In the middle sections strips of timber have been placed on end and fitted like shingles. Each gable has been covered with lumber. The latter method is to be preferred over log or other gables, because of the time that can be saved in the building.



Fig. 7.—A barn near Republic. The logs and lumber all came from the farm, the lumber being sawed at a local mill. The horse and cow barns are in opposite ends of the building, making unhandy care and feeding. There are also too few windows.

The door and window casings are made for log houses as for other buildings. As mentioned before, time is well spent that is taken to make plenty of windows in the log house. The extra light makes the house much more inviting and comfortable to live in and more adaptable for other uses when it has served its purpose as a home.

If some care is taken in the fitting and matching of the logs as the house is being put up, chinking in the cracks of the walls and windows will be a comparatively easy job. The ordinary way of finishing is to cut strips of wood to fill in the gaps and chinks between the logs, and then to plaster over the opening between the logs, both inside and out. This makes the structure weather proof. If a good coat of whitewash

is then applied, the log house becomes a snug, neat and comfortable home of pleasing appearance, rather than a rude shelter from the weather.

A good white wash for the outside of buildings can be made from the following directions taken from U. S. Department of Agriculture Farmers Bulletin No. 484.

(1) 62 lbs. (1 bu.) quicklime, slake with 15 gl. water. Keep barrel covered until steam ceases to rise. Stir occasionally to prevent scorching.

(2) 2½ lbs. common table salt.

1 pound sulphate of zinc, dissolved in 2 gl. boiling water.

(3) 2 gl. skimmed milk.

Pour 2 into 1, then add the milk (3) and mix thoroughly.

For interiors, walls, ceilings, posts, etc., mix as follows:

(1) 62 lbs. (1 bu.) quicklime, slake with 15 gal. water. Keep barrel covered until steam ceases to rise. Stir occasionally to prevent scorching.

(2) 2½ lbs. rye flour, beat up in ½ gal. cold water, then add 2 gal. boiling water.

(3) 2½ lbs. common rock salt, dissolved in 2½ gal. hot water.

Mix 2 and 3; then pour into 1 and stir until well mixed. Other methods of mixing whitewash and handling paints can be had from the above mentioned bulletin.

The foregoing suggestions for the building of log houses are intended as general suggestions taken from practical buildings that have been erected by new settlers. A man's own ingenuity and resourcefulness will largely determine the success he will have with a structure of this kind.

POLE HOUSES

For want of a better or more expressive term, we call buildings made by placing logs or poles on end, rather than laying them horizontally, pole buildings.

Pole buildings for temporary structures have several advantages over log buildings, most important of which are:

1. They are easier to build; one man working alone can handle the logs and poles.
2. Smaller poles and timber can be used.
3. Shorter pieces can be used than in log houses.
4. Ends of logs at corners need not be notched, sawed, or fitted.

Figs. 8 and 9 illustrate two homes on new farms on cut-over Michigan lands. They are not elaborate, but when finished, they are neat, warm, and comfortable. Aside from roofing windows, etc., not one cent was spent for lumber. Timber was used that otherwise probably would have been burned as waste. In Fig. 8 the cracks and chinks have not yet been plastered over.

The usual way of starting a structure with the poles upright is to lay a foundation with sills hewn so that they are four to six inches square. Sometimes a couple of two-by-six timbers are nailed one on top of the other and used for sills, but timbers will serve equally as well. Fig. 12 shows how the plates are fitted and placed. They must,

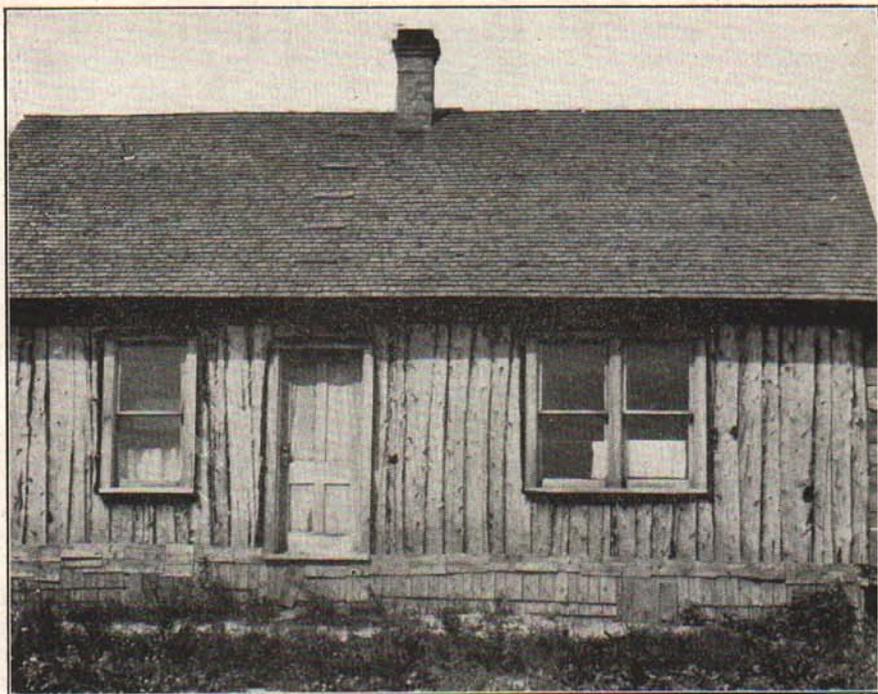


Fig. 8.—A house made of cedar logs, hewn and set on end.

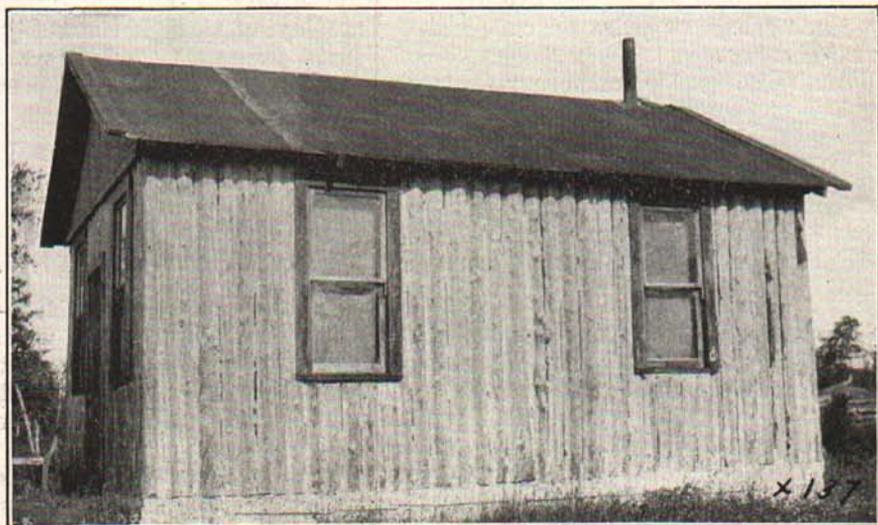


Fig. 9.—A pole house makes a comfortable temporary home. It is easily made, and the poles can be cut on the farm, saving time and hauling expense. (Smaller poles were used in this house than those shown in Fig. 8.)

of course, be smooth and level on the top surface for the square placing of the poles.

The upright poles are cut to the length, or height, that is desired between the floor and the ceiling, on the inside, less the width of the timber or planks that are used on the top of the upright logs. The corner logs are set up first and the top plates placed on them. Then the other logs or poles can be matched and fitted one at a time. For a house or barn, logs or poles with a diameter of not less than

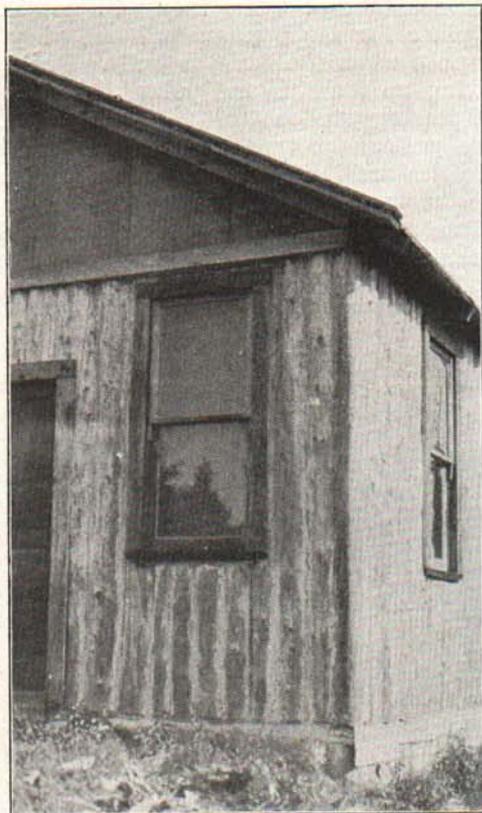


Fig. 10.—A corner of the house in Fig. 9, showing how the poles are set and matched. The gable ends are usually covered boards, instead of extended poles.

four or five inches should be used. They can be hewn more flat and square so that they match closely, with fewer chinks and cracks to be filled and plastered over. Fig. 12 shows cedar posts about six to seven inches in diameter that have been hewn to match for the first floor of a barn. Very little chinking will be necessary to make these walls weather proof and solid. Compare this with Fig 11 where small tamarack poles have been used and are not yet chinked in.

The smaller poles serve the purpose very well for smaller and more temporary buildings, such as garages, sheds and temporary houses,

which are not intended for permanent buildings. Where the building is intended later to form a permanent part of a larger addition, larger poles that can be hewn should be used.

The house in Fig. 9 was put up by a new settler on a cut-over farm near Chatham, in Alger County, Michigan, with a minimum of effort and expense. The only parts of the building that he did not take from his own farm were the roofing and the windows. The plaster and coat of weather-proof whitewash made the building very comfortable and attractive. Buildings of this kind should be so planned and placed in planning the farmstead that while they will not have to be moved later on to make place for the permanent home, they can be utilized for some other purpose when the home is built. Fig. 10 shows plainly the method of putting up the sills and poles with stringers at the top, and the method of placing windows.

Fig. 8 is a more permanent type of building that has proved very satisfactory. The poles are larger and are all hewn and matched. As soon as the farm is more developed and a larger home is desired, this house can be used as an addition to the new house. By covering the walls of this structure with a layer of building paper and shingles, as shown in Fig. 14, one can make a very attractive and well built home.

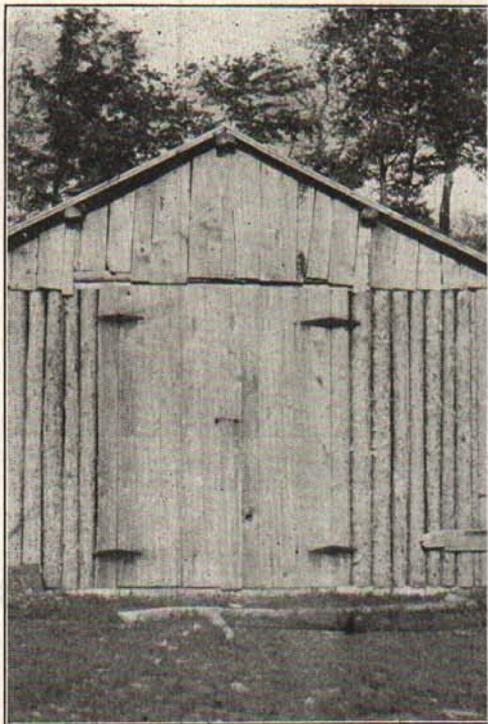


Fig. 11.—A garage made of tamarack poles. This method shows larger chinks, which are harder to fill than those in buildings where the poles are trimmed on each side.

BARN

Barns, hog houses, sheep sheds, and the like offer even more opportunities than houses for the utilization of waste poles and cull timber on the new farm. Care in finish and matching is not as essential as in the house, and more use can be found for the temporary pole and log

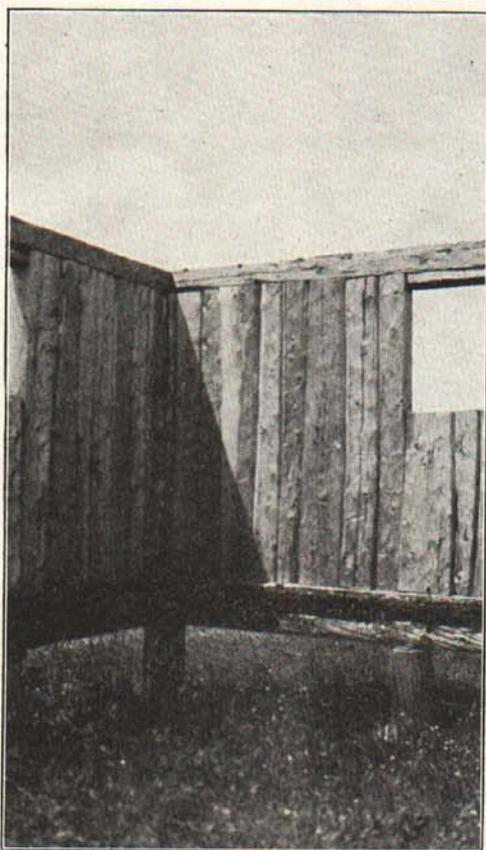


Fig. 12.—A barn basement being built of cedar logs set on end. The method of nailing them at the top and bottom between two long logs is clear. This type of basement was used in the barns shown in Figs. 17 and 18.

barn after the permanent building is put up. Log barns are put up in the same manner as log houses. Be sure to watch and provide for plenty of windows and ventilation. Nearly every log barn that has been examined in gathering material for this publication has been entirely too dark. This makes the building both unhandy to work in and unpleasant for the stock, and it is of very little use after it has been replaced by the permanent barn.

The common way of erecting log barns of any size has been to build

the horse barn and cow barn on either side of a center section, as in Fig. 2. The sides or "lean-tos" are finished and weatherproof, while the center section, which is used for hay and straw storage, is more or less open. This method makes a serviceable barn. The disadvantages are waste room and unhandy arrangement for feeding and cleaning. Probably the greatest drawback to a barn of this type is that it is

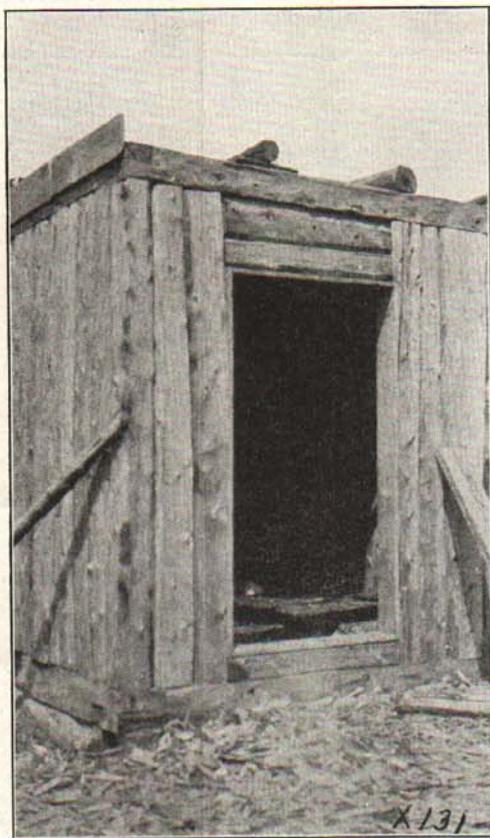


Fig. 13.—The doorway of the barn basement shown in Fig. 12. The logs above the doorway are laid horizontally as compared with the method of finishing with short logs on end.

almost impossible to build any additions to it that will prove convenient and practical.

The most satisfactory method, where the material is available, is to select the site on which the permanent barn is to be placed and either use poles and logs for the frame, if sufficient funds are not available for lumber, or build one section only of the basement or barn from logs, to which additions can be made so that each part as built will become part of the larger structure.

Figs. 12 and 13 show one section of a barn in the process of building, the hewn logs making a basement to which the rest of the barn

can be added as time and funds permit. This section was planned to be as wide as the permanent barn and as high. The length was about 15 feet. This section was finished complete with the basement, and a hip roof. In this way other additions could easily be made and the whole utilized.

Figs. 15 and 16 show how this barn was finished with poles for frames

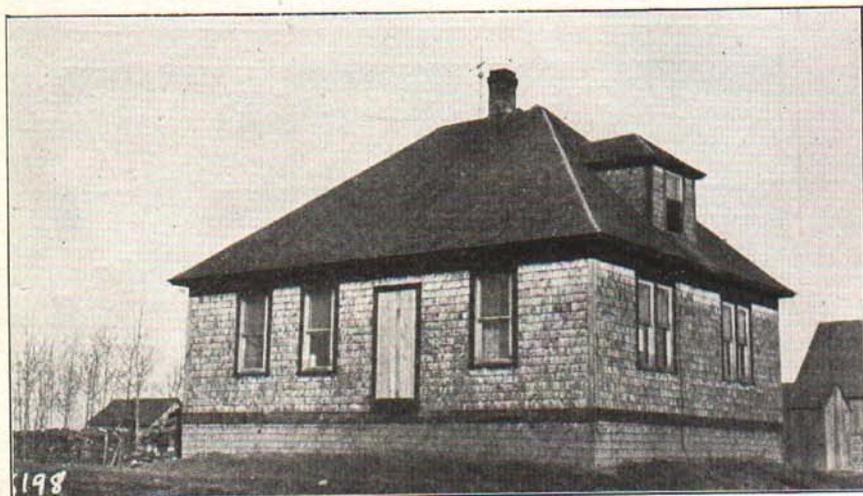
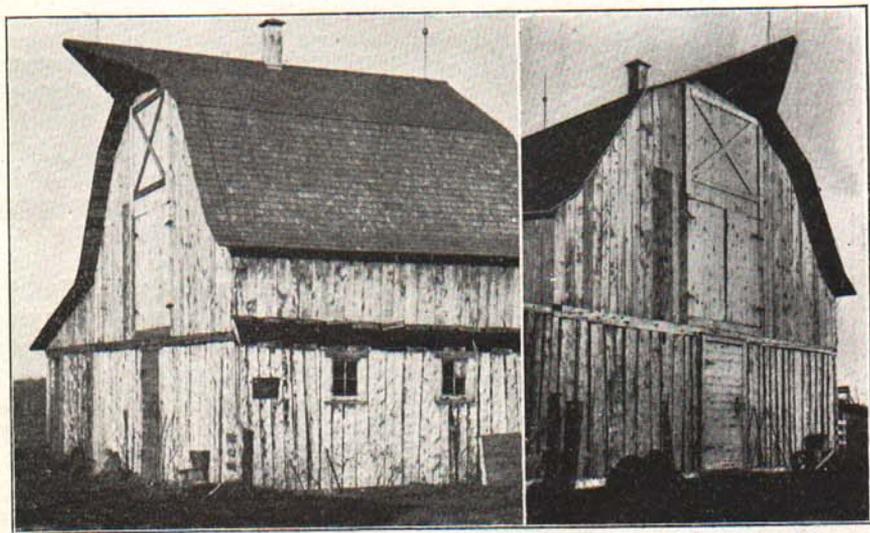


Fig. 14.—This house was made of cedar logs, as was the house in Fig. 8. The logs were then covered with shingles, making a neat and weatherproof home.



Figs. 15 and 16.—Showing how the barn (started as illustrated in Figs. 12 and 13) was finished, with poles for frames, and covered with lumber that was sawed from logs taken from the farm.

and covered with lumber that was sawed from logs taken from the farm. Windows, roofing or shingles, and nails were the only materials for the entire barn that did not come from the farm. The boards necessary to finish out the top were sawed at a local saw mill at a cost of about twenty-five dollars.

For the ordinary man on a new cut-over farm, a large barn is not necessary. A shelter that is easily and cheaply built, which affords a

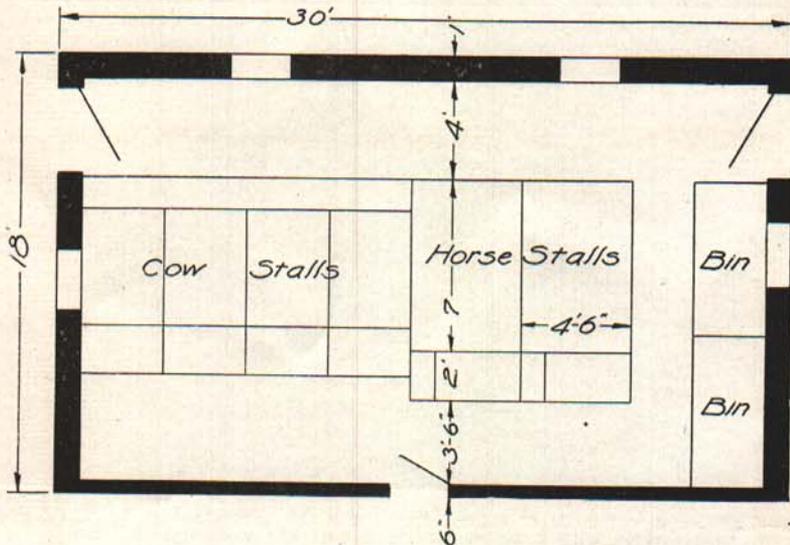


Fig. 17 (A)—Floor plan of first section of barn, planned for later additions.

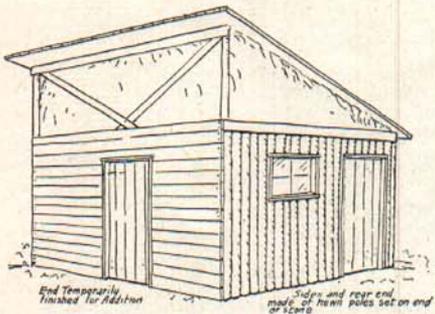


Fig. 17 (B)—First section of barn basement of hewn cedar posts, with temporary end and roof. End is covered with boards so that addition can be made easily.

comfortable shelter for a team and three or four head of stock, is large enough for the first few years. The important thing is to get the land cleared and under cultivation to support the stock before too many animals are bought.

The sketch and plan in Figs. 17 and 18 suggest means of laying out and building from the materials at hand a section of a barn that can later be added to to make a permanent barn structure. Fig. 19 illustrates another way of

utilizing short logs in buildings, the logs being placed horizontally instead of vertically and matched to corner posts rather than notched as in a regular log structure. This method, however, does not offer any advantages over placing the poles upright and requires a little more time in the matching at the corners. The shortcoming with

this barn is that it is too dark and is so built that it would be difficult to add to it for a convenient, permanent barn.

Not only the frame and outside walls of the barn can be, to a large extent, made from the waste poles and lumber on the farm, but also almost the entire inside of the barn can be made in the same manner. The saving that can be made in this way depends only on the man's ingenuity and resourcefulness in making use of the material on hand. Good practical illustrations of almost every piece that is necessary to finish on the inside can be found in every new community.

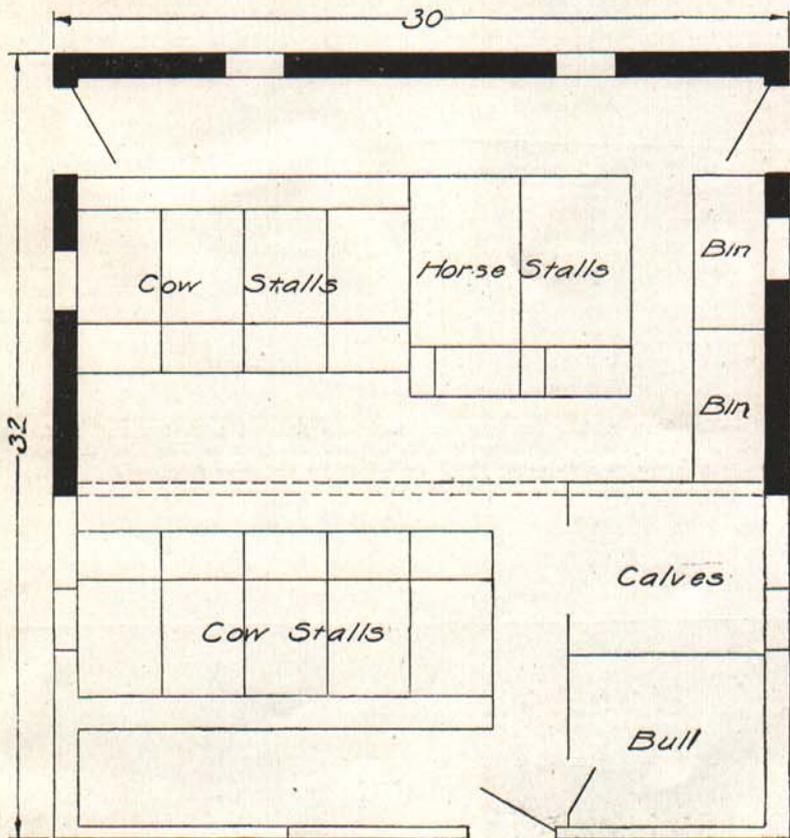


Fig. 18 (A)—Floor plan of completed barn.

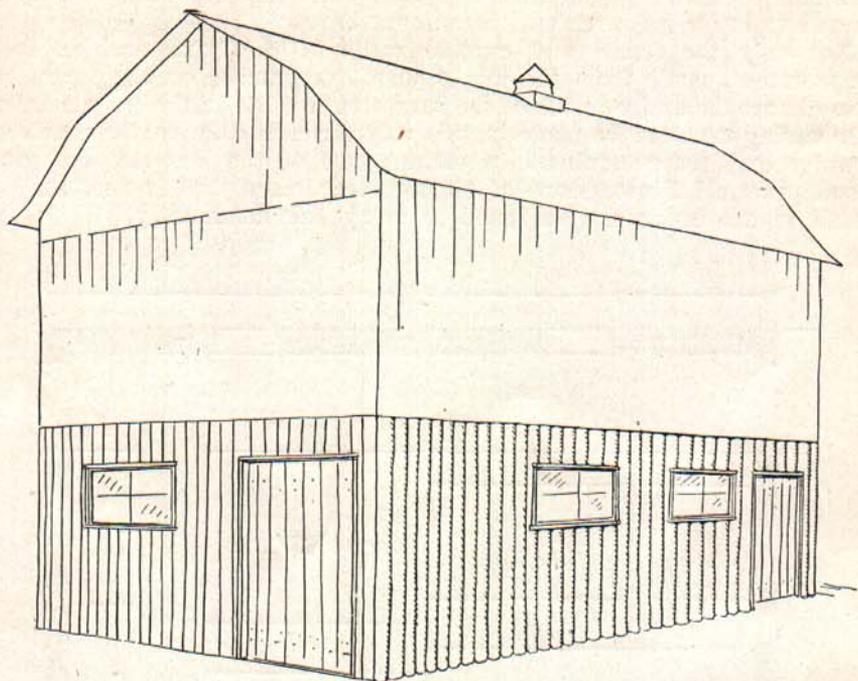


Fig. 18 (B)—The barn with cedar basement has been finished with top and roof, making a good, practical barn. If more room is wanted, another addition at the back end can be made, and every part of even the first temporary barn made use of.



Fig. 19.—Barn made of cedar logs laid horizontally. It would have been better if more windows had been provided. The ends are toenailed to corner logs, instead of the method of notching and crossing used in other log buildings.

ROOT CELLARS

Root cellars are a necessary part of every farm in northern Michigan. While they are not difficult to put up, care should be taken that they are well covered with dirt so they are frost proof, and that the roof

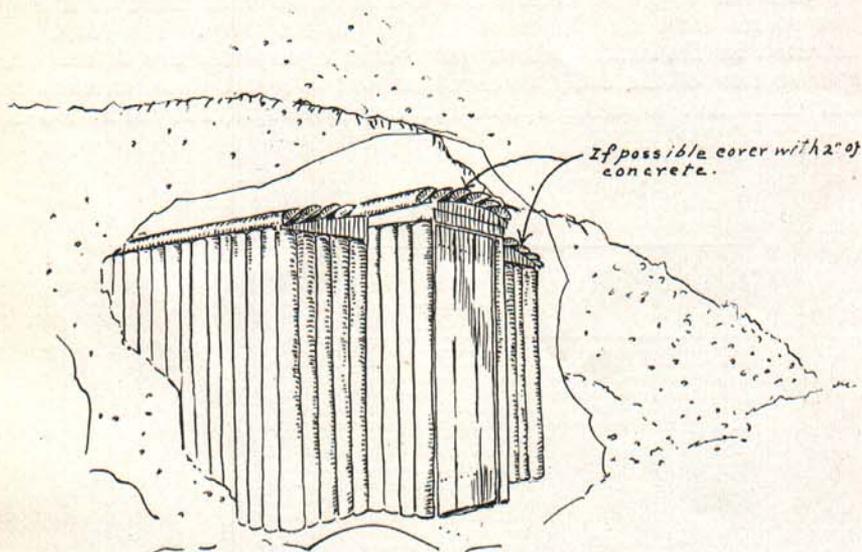


Fig. 20 (A)—A root cellar dug into side hill, made by standing three to five inch poles on end, using split poles for roof and covering with dirt. If possible, the roof should be covered with two inches of concrete, to make it water proof.

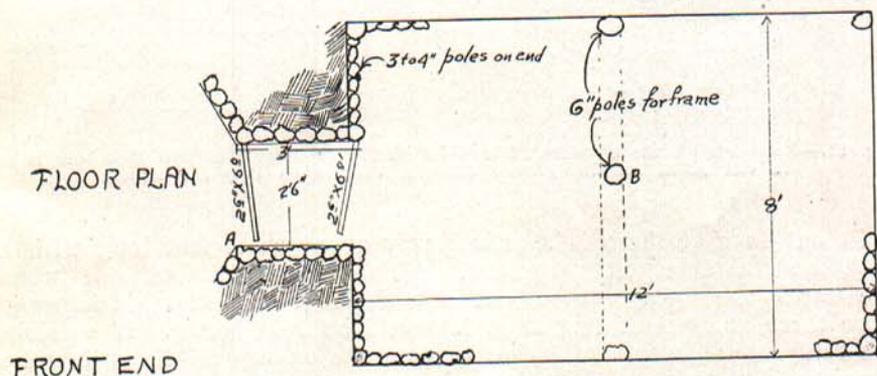


Fig. 20 (B)—Floor plan of root cellar.

is weather tight. Fig. 20 illustrates a root cellar made of poles and well covered with dirt. This cellar is dug into a side hill and the dirt is thrown back on after the frame and roof are up.

Straight poles of three to five inches in diameter are used in the walls and frame. The two end posts, about five inches in diameter, are

put up first with either a large rock or concrete as a foundation. Then the top stringer is nailed to the end posts and the three or four inch poles are set on end and toenailed, making the side wall. The ends are made in the same manner. Only one pole, in the center of the cellar at "B" in Fig 20-A is necessary. The frame for the roof is made by laying cross pieces across the ends and across the center post "B" from each side. These crosspieces are hewn so that there is a slope of six inches from the center of the roof to the sides. The front end, illustrated in the sketch, shows how these crosspieces are fitted. The center section of the roof, which comes out over the door, extends out about three feet to make a roof for the doorway. The sides, too are

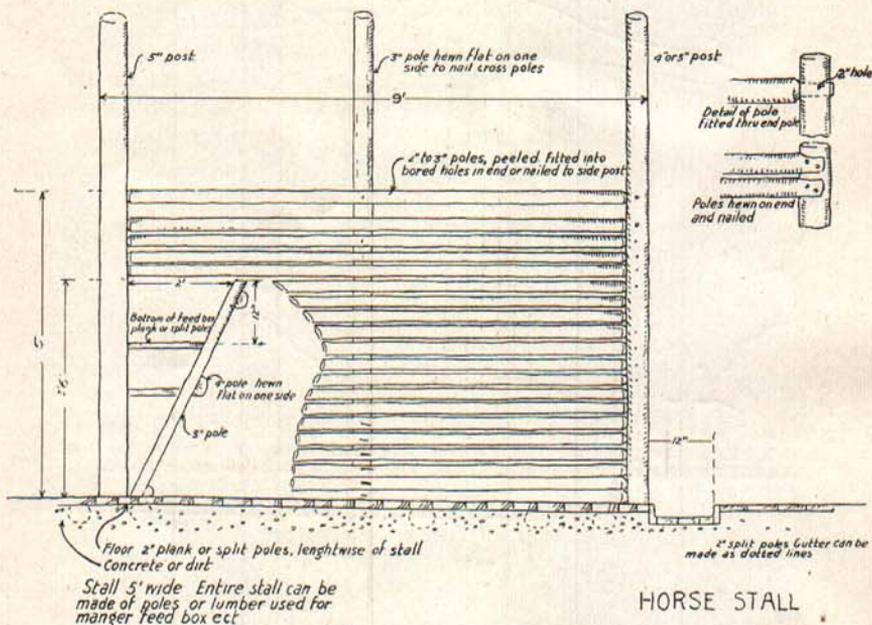


Fig. 21.—Horse stall made of poles. The poles should be fitted into two inch bore holes in end posts, to give greater strength than when they are nailed.

built out so that there is a passageway about three feet long with a roof, and a door, at each end. This keeps the cold out when the roots are being taken out for feeding. If this passageway were three and a half feet long, it would be even better. If possible, the roof should have two inches of concrete on top of the split poles to make it more watertight. The large vent that is shown is put in for convenience in filling. It should be filled with dirt when the cellar has been filled and a smaller vent pipe should be inserted for ventilation.

This type of cellar has proved very satisfactory. The size, of course, can be varied to suit the individual needs, and, if desired, it can be made of logs laid horizontally instead of poles.

Fig. 21 shows a practical horse stall, where poles were utilized instead of regular lumber. This can be changed to suit the time and

poles available, but care should be taken in making this stall to make it handy, strong, and convenient. Where boards or planks are available, it will probably be best practice to make the manger and feed box of boards rather than of poles. It may not be necessary to have the poles quite as close together as they are shown in the illustration, but at least two or three feet from the floor should be tight. Split poles are serviceable for the floor, both in the stall and in the litter trough. Planks will, of course, make a smoother floor that is easier to keep clean.

For the cattle barn, if the first building is only temporary, it may

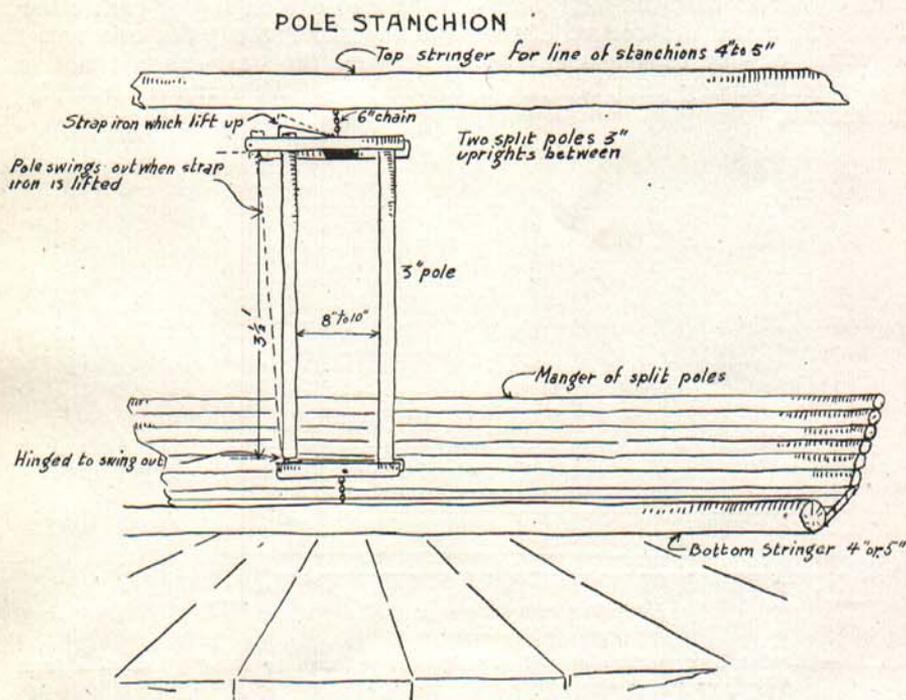


Fig. 22.—Cow stanchion made of poles. One pole is hinged at the bottom to swing out between two split poles at top.

not be worth while to make regular stanchions, although the extra convenience and comfort, both to the cow and to the person working in the barn, make it doubtful economy of time to use mangers. Good, serviceable stanchions can be made from poles, some strap iron, a hinge, and some chain. The illustration, Fig. 22, shows one stanchion made from two inch poles. The one pole is hinged to the cross piece at the bottom, and the strap iron is used as a latch to hold it locked when the cow is in the stall. A short chain or loop at the top allows the stanchion to swing and move, and a six inch chain at the bottom allows plenty of movement for the comfort of the animal. Any kind of straight pole can be used for this work, and a stanchion requires very little

time in the making. The stringer at the top of the line of stanchions, as well as the bottom, can be made of poles. The floor and manger, as in the horse stall, can be made of poles.

Calf pens can be constructed very easily from poles. Almost any kind of timber can be used for this, as not much strength is required. Pens should be made either with a good wide gate, or, as illustrated in Fig. 23, so that the whole side can be lifted out. This makes the pen easier to keep clean. When not in use as a calf pen, the room can be used to good advantage for storage or other purposes. This method of making pens can be used outside the buildings, for outside calf pens, and hog pens. The illustration shows a method of using two poles at each corner so that the long poles can be laid one on top of each other. This will make the corner stronger than where the poles are nailed or wired on one corner post. Wire between the posts should not be used in calf or hog pens, because of the danger of the animals scratching themselves.

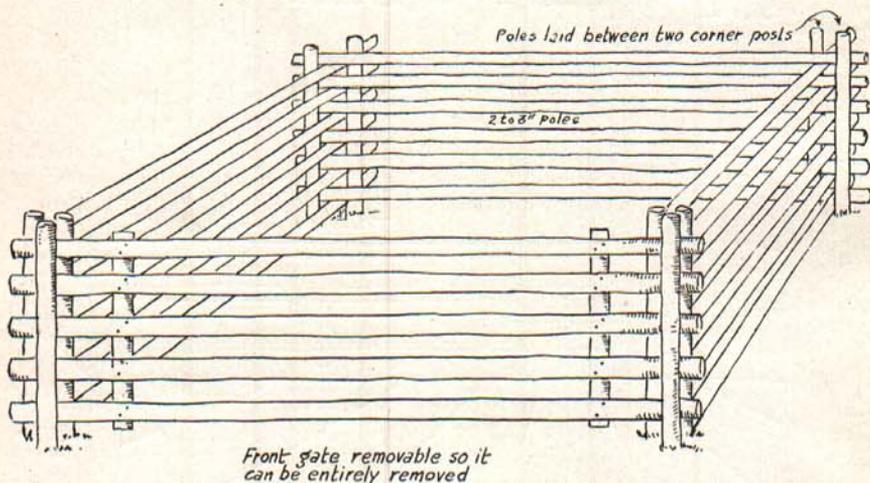


Fig. 23.—Showing how sections of calf pens can be built up by using poles. The front section is like a gate and can be lifted from between the posts.

HOG HOUSES

A very practical and serviceable hog house can be made by using logs for poles for the house itself and making the run from poles, in the same manner as illustrated for the calf pen. For a hog run, however, more poles are required to make the fence tighter. A good gate, wide enough to make it easy to get in and out of the run for feeding and cleaning, should be made. A movable hog house can be made after the same plans as those for the regular colony hog house, and poles substituted for two-by-fours wherever they are used. For the first few years, however, it is doubtful if a colony hog house is desirable for the number of hogs that can be kept. Fig. 24 illustrates one method of using poles for a hog run. Very often the log house that served

as a dwelling can be utilized for a permanent hog house when the permanent home is built.

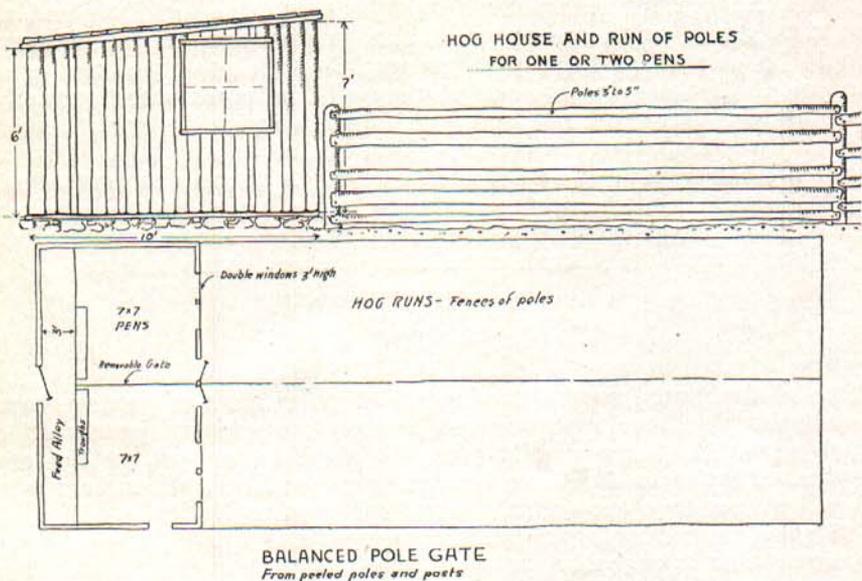


Fig. 24.—Hog house and run of poles. The house and run can be divided to make two pens. Additions can be made to the end of the hog house to add room.

CHICKEN HOUSES AND CHICKEN RUNS

A few chickens are probably the best investment that a man on a new farm can make, but some shelter and pen must be provided. While

CHICKEN RUN OF POLES

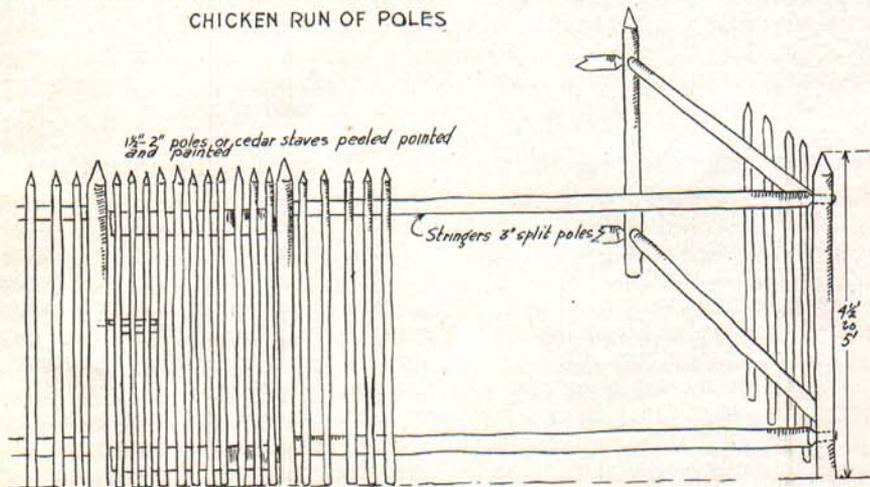


Fig. 25.—Poles must be close together and should be five feet or more high for a pole chicken run.

the clearing is still small, the chicken pen is usually close to the house, and a fence of some description should be provided to keep the chickens out of the garden and small fields.

For a chicken run, the poles should be about five feet long and set upright. Small poles, one or two inches in diameter, can be used and should be pointed at the top to prevent the chickens from sitting on the poles. If the poles are peeled they will be much more attractive and durable. For the frame on which to nail or wire the upright poles, straight poles of about three inches in diameter are best. Fig. 25 shows a chicken run made of two inch poles. A better and neater looking job can be made if, instead of using round poles, cedar staves are used. These staves can easily be split in two inch strips from straight cedar, and they make a much more attractive and durable fence.

POLE FENCES

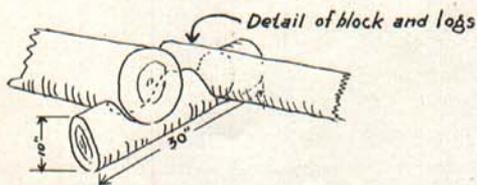
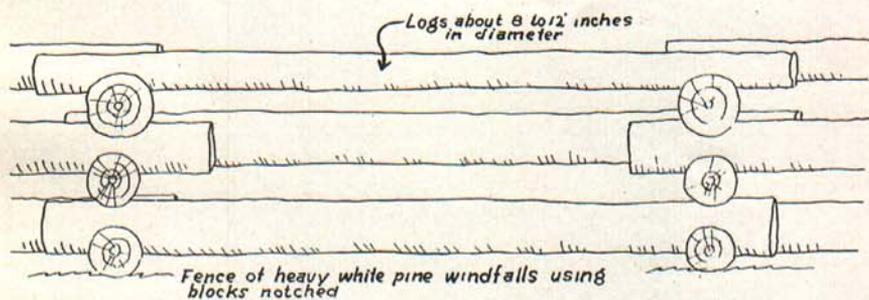
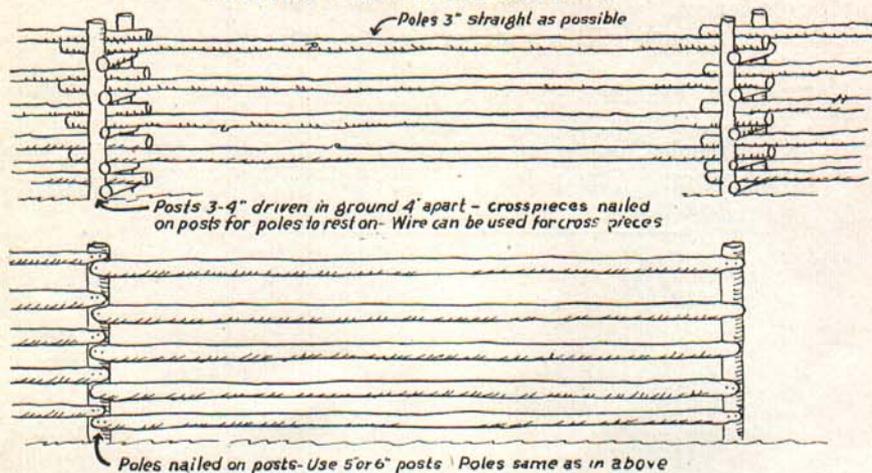
One of the most frequent uses to which poles are put on new farms is in fencing. There are numerous kinds of pole fences, nearly all of which serve the purpose of keeping the stock in, or out, as the case may be. The fences that have been selected for illustrations here were taken because they were simple, practical, and easily made. Figs. 26 to 29 show several methods of utilizing poles and logs in fencing. Fig. 26 shows what is probably the usual way of building pole fences. Two posts are set, instead of only one, and crosspieces on which the long poles rest are nailed onto the two posts. This braces the upright posts and makes a more solid fence. Wire instead of wooden crosspieces is very often used to go between the posts. It forms a place for the horizontal poles to rest and braces the upright posts as well as the wooden crosspieces nailed onto the posts.

In Fig. 27 another method of fencing with poles is illustrated. Instead of using two upright posts with crosspieces between, only one post, as for a wire fence, is set, and the long poles are nailed onto it.

This method requires a little less work, but the posts set in the ground must be stronger and firmer, and the fence is not as rigid as where two uprights are used. Fig. 30 shows a photograph of this type of fence in use.

In areas of white pine it is often possible to find long deadfalls in which the wood is yet fairly solid. These large logs can be utilized for a very serviceable fence, as illustrated in Fig. 28, even if they are not in sound enough condition to make logs for buildings. This method of building is simple. Blocks about 30 inches long and six to ten inches in diameter are placed on the ground far enough apart so the ends of the logs will overlap from six inches to a foot. The log is then notched on the bottom side for the block. Then the next log, in length, is notched in the same manner and one end placed on the block. Then another block is fitted in the same way at the other end, and so on for the length of the fence. The logs of the second tier are notched and placed in exactly the same manner, the block between the tiers of logs acting as the post in an ordinary fence. The white pine will last for years, and the fence is strong and durable. It occupies more room

FENCES FROM POLES AND LOGS



Figs. 26, 27 and 28.—Three types of pole fences commonly used. The fence in Fig. 28 (the bottom illustration) is made of old white pine deadfalls.

PICKET FENCE
From round poles 2" peeled and painted

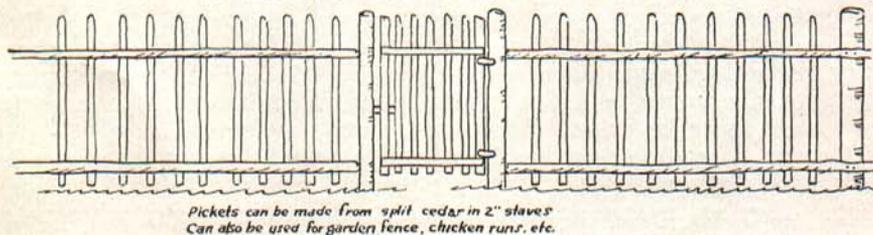


Fig. 29.—Picket fences are simple to build, neat and attractive.

than the other two types of pole fences but probably will outlast the small pole fences.

Picket fences are still a part of the homestead on new farms. For garden fences, yards, and chicken runs, they are simple to build, neat and attractive, and they answer the purpose better than ordinary pole fences. Fig. 29 illustrates the common method of putting up a picket fence. Small poles, one and one-half to two inches in diameter, make the neatest fences. The poles, for any fencing, should be peeled and



Fig. 30.—Poles make a serviceable temporary fence.

then painted or given a coat of weatherproof whitewash, as described previously in this article. Fig. 31 shows a home on a new farm, where every piece has come from what is ordinarily called waste timber. The gate, the house, and the whitewashed picket fence make a home, not luxurious or imposing, but attractive and comfortable.

If cedar is available on the farm, staves for the picket fence can be made by splitting the cedar into strips two inches wide and one inch thick. They are neater and more durable than almost any other poles that can be used for a picket fence. When split into staves pointed

on the top, and painted, a picket fence of cedar can be made very attractive.

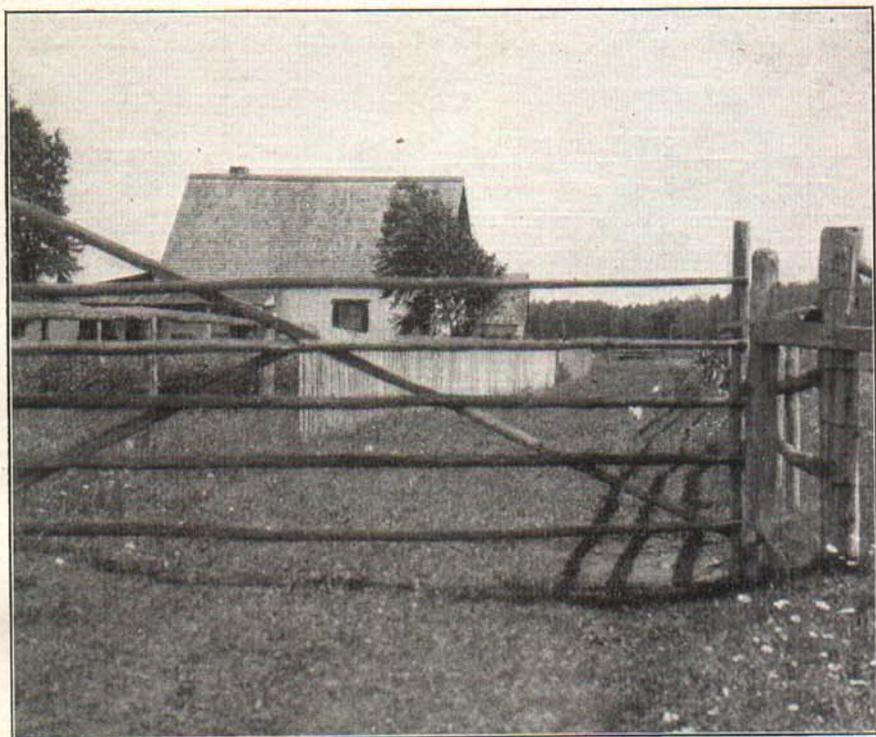


Fig. 31.—A coat of whitewash, a picket fence, and a pole gate, with the garden, make this home attractive. Every piece of lumber came from the farm.

GATES

Whether wire, pole, log, or picket fences are used, there are very few farms in Northern Michigan where a substantial pole gate is not practical. The material is usually at hand, and, when built properly, a pole gate is as strong as one made of planks and boards, if not stronger.

Three types of common gates are shown in Figs. 32, 33 and 34 and

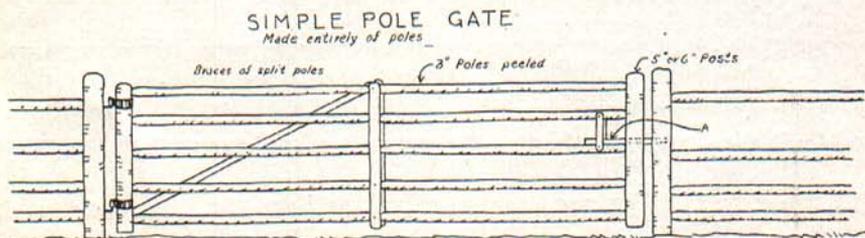
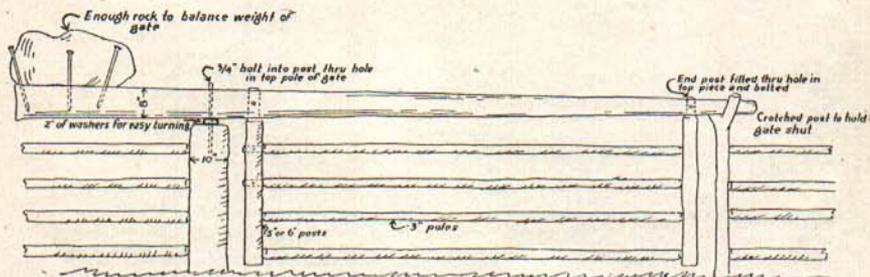


Fig. 32.—The simplest pole gate made. It is not as strong as those shown in Figs. 33 and 34.

a photograph of the gate in Fig. 34 is shown in Fig. 31. Fig. 32 shows the common and most easily built gate. It is made entirely from poles. Almost any kind of a pole can be used, cedar, spruce, or tamarack probably being the best, due to the fact that they are straight and, when seasoned, fairly light. The details of the gates are clearly shown. The

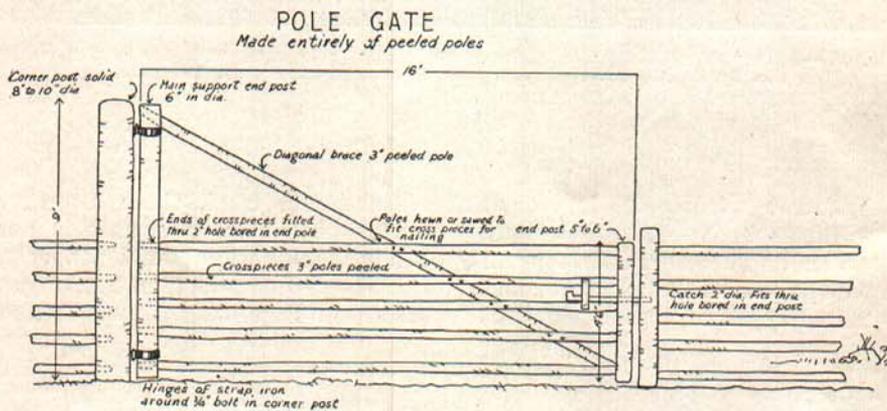


NOTE: Dimensions given are only approximate of the size of posts and poles that should be used.

Fig. 33.—One of the best types of gate. The back balances so that the gate end swings free.

size is, of course, optional, although a length of from 12 to 16 feet is about right.

For the two end posts, poles five to six inches in diameter are used. For the cross poles, those two and one-half to three inches in diameter are best. The number of poles to be put in the gates depends on the use for which it is intended. Sometimes, if a gate is for a cow or horse pasture, only four poles are used, about 12 inches apart. Five poles are better, the lower three being placed from three to eight inches apart.



NOTE: Size of gate and poles used optional. Crosspieces can be nailed to end posts in place of fitted thru bore holes.

Fig. 34.—This is a very good pole gate. The long end post and brace overcome the tendency to sag.

If the gate is to be used where calves or hogs are to be run in the enclosure, not less than five poles should be used. For a hog gate, the lower three poles should not be over three to four inches apart.

The best method of constructing pole gates is to fit the ends of the long poles into the end pieces, rather than to nail them on. This gives more strength and rigidity to the gate, and it will sag less than where they are nailed to the upright end pieces. A two inch hole

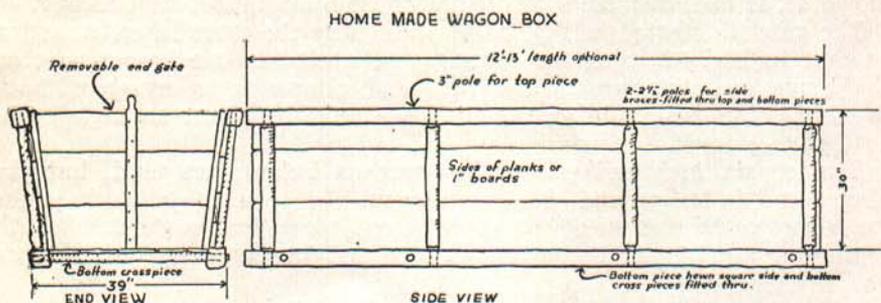


Fig. 35.—This wagon box is made of poles and boards or planks. It is easily made and will haul a big load.

can be bored into the five inch end post and the ends of the long poles fitted in. Then, if a nail is driven through, it aids greatly in bracing the gate. The crosspieces in the center of the gate are made by splitting a three inch pole in half and nailing the halves on each side. Another diagonal brace can be put on to strengthen the frame. Various types

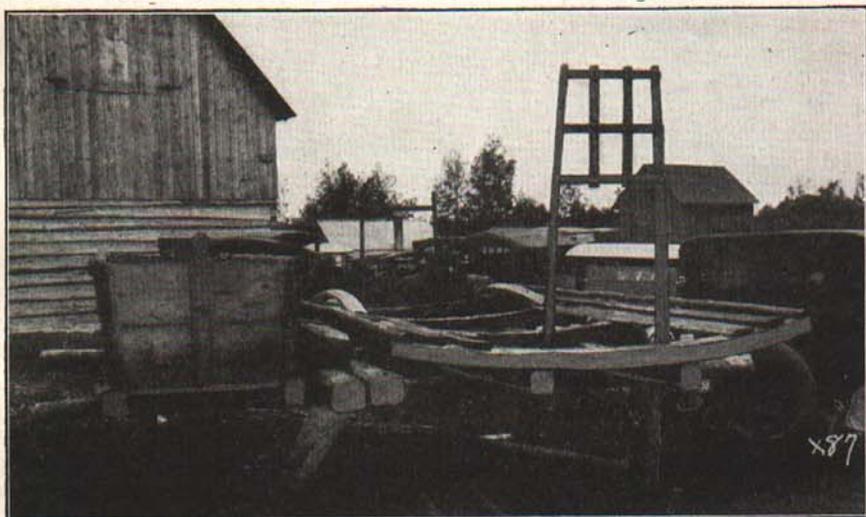


Fig. 36.—Wagon box and hay rack made from old poles and boards.

of hinges are used, but the one illustrated can be made cheaply and is very serviceable.

The catch at "a" in Fig. 32, shows a common fastener for pole gates. The cross pieces are nailed, one at each side of the second and third poles from the top, and a two inch hole is bored through the end piece

and into the fence post. Then a piece of wood is trimmed to fit through these holes so that it can slide back and forth.

The chief objection to this gate is that it will sag in time and it is almost impossible to so brace it that it will not drag on the ground. However, it does require a minimum of time and effort in building.

The gate illustrated in Fig. 34 is practically the same in construction as that in Fig. 32, with the advantage that it has the longer post on the hinge and this braces the gate and allows it to swing without sagging. The post holding the hinges should be about as high again as the gate itself.

Five or six inch end posts, the same as before, are used, but the hinged end is longer and the long diagonal brace which runs from the top hinge to the bottom of the opposite end piece, braces the full length of the gate and offsets the tendency to sag and drag on the ground. Two

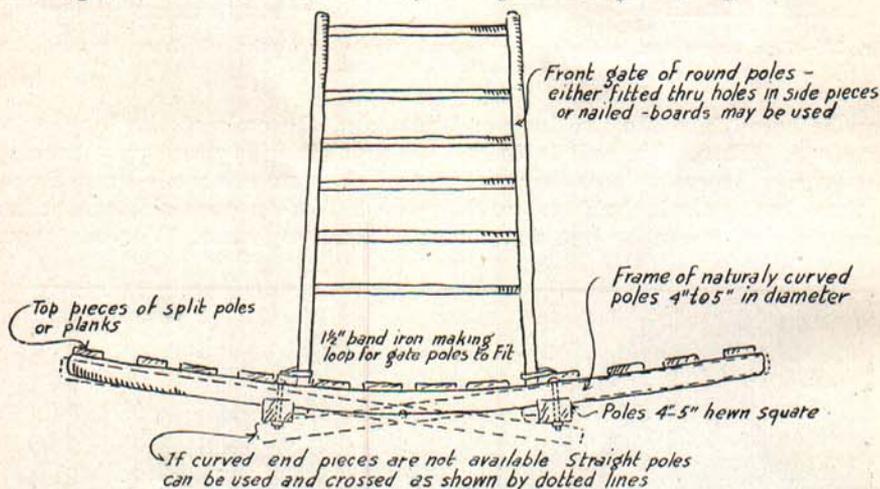


Fig. 37.—The hay rack is necessary on the new farm and is not hard to make.

and one-half to three inch poles are used for the long pieces, as before, and the same type of latch is shown.

For the extra amount of work and time that is required this type of gate will outlast and outwear the gate of either Fig. 32 or 33. It is probably the best type to build for general use.

In Fig. 33, another form of pole gate, very common on new farms, is illustrated. The general construction is the same as in the other two, but the tendency to sag and drag on the ground is overcome by balancing the weight of the gate over the end post on which it swings. The lower frame and poles hang suspended from the top pole. In this instance the top pole must be fairly heavy and five to five and one-half feet longer than the main part of the gate. The frame containing the two end posts and cross poles is hung on the top piece as illustrated by being fitted into two inch holes. The post on which the gate rests must be at least eight to ten inches in diameter at the top. An iron bolt about three-fourths of an inch through and about 18 inches long is driven into the top center of this post. If a large nut and washer

are then placed on this bolt, between the post and the top pole of the gate, the gate will swing more freely. A hole is bored through the top piece, as illustrated for the bolt. The long end of the top piece can be weighted with a large iron, rock, or other material. It must be heavy enough so that it practically balances the gate end and allows it to swing free.

POLE WOOD-RACK

Made from hewn poles, and cross pieces of round 3" poles

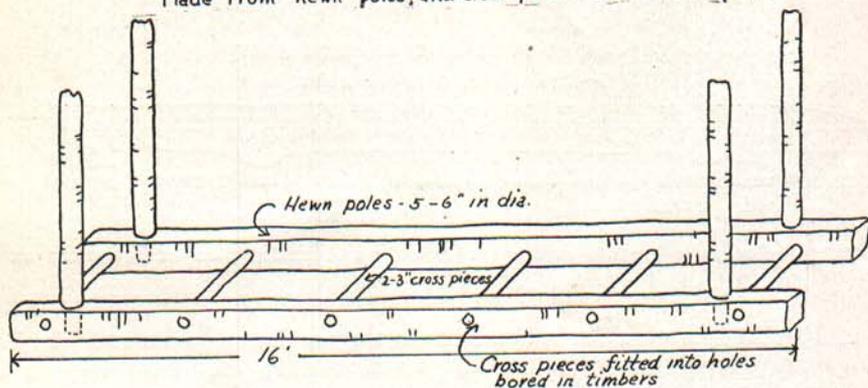


Fig. 38.—The pole wood rack proves useful.

The idea of the crotched fence post into which the top gate pole fits can of course be varied and some other means of locking the gate can be provided. When properly made and balanced this gate is very easily operated.

It does not drag on the ground or sag unless the top pole is small enough so that it will bend and warp under the weight of the stones on one end and the gate on the other. A cross brace of a split pole extending from one top corner to the opposite lower corner, would add to the strength of the gate.

Small gates for picket fences and yards are also frequently made from poles. Two split poles are used as cross pieces and the small poles nailed to them, as illustrated in Fig. 29. For this purpose, small poles one and one-half inches to two inches in diameter are most suitable. If they are peeled and painted at the top, the gate will look much neater and will last longer. A coat of paint adds greatly to the life and appearance of the small gate.

POLE LADDER

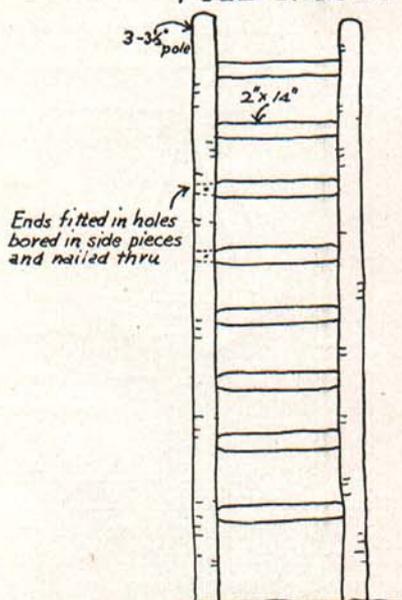


Fig. 39.—A simple pole ladder.

IMPLEMENTS AND TOOLS

The resourcefulness and ingenuity of some settlers in making, from poles and timber, the different tools and articles which are necessary on the farm is remarkable, and the list of what can be made is almost endless. The accompanying sketches and pictures may serve to suggest some things that are practical and easily made.

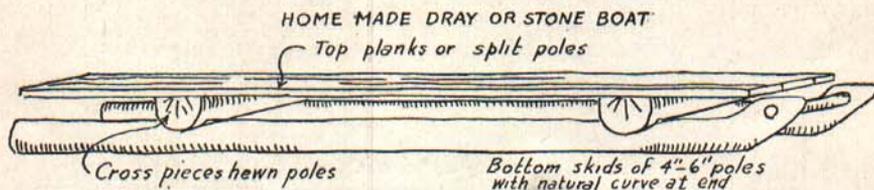


Fig. 40.—The stone boat is another easily made and needed piece of equipment on the new farm.

In Fig. 35 is a plan for a home-made wagon box of poles and planks. The same box is illustrated in the picture in Fig. 36. The diagram is self-explanatory. The poles used must be straight and strong. Next to the wagon box in Fig. 36 is a hay rack which has proved serviceable and is easily made. This is shown more in detail in Fig. 37. While in this

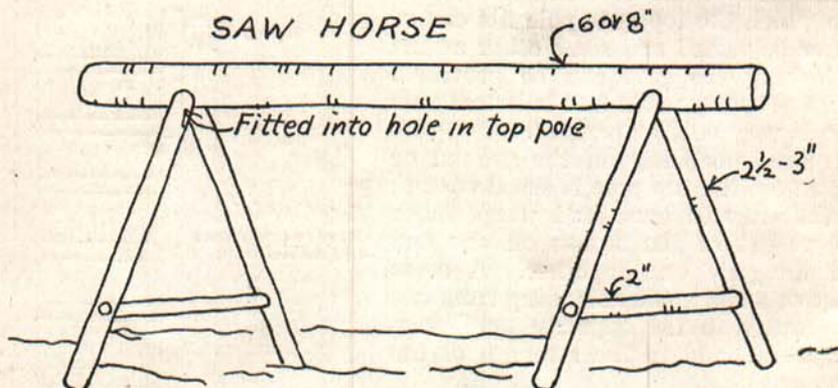


Fig. 41—A practical saw horse.

particular case a natural curved piece was used in each end, it is practical to use two straight pieces as shown by the dotted lines in Fig. 37. The length and size are, of course, optional with the builder. Either planks or split poles can be used for the top pieces. If planks or one-inch boards are available, they are preferable.

If the top part is made removable, the bottom frame can be used as a base for the wood rack, as shown in Fig 38.

POLE RACK FOR YARD FEEDING

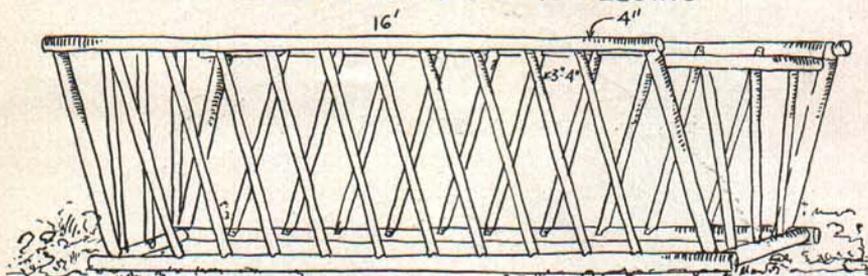


Fig. 42.—A pole rack for yard feeding. Can be made any size, but should be 15 or 16 feet long.

In the series of sketches, Figs. 38 to 44, are shown several things that can be made at home from material on hand. The ladder, the stone boat or dray, the saw horse, the feed rack and other items are all needed in every-day farm life. When bought they eat into the capital which should be used to clear and develop the farm.

As stated previously, too much stress cannot be placed on the fact that the first few years do not require large and pretentious buildings. They should be comfortable and neat, but until the stumps and brush are removed from a goodly portion of the farm, that task should be the major project on the new farm. The permanent homes, barns, and other buildings, unless the settler be blessed with an abundance of capital, should come after, not before, a piece of clearing.

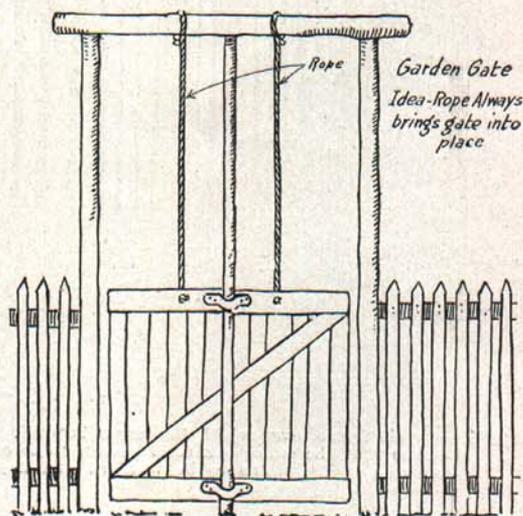


Fig. 43.—A convenient gate for yard or garden. The ropes twist as the gate is pushed and always bring it back to place.

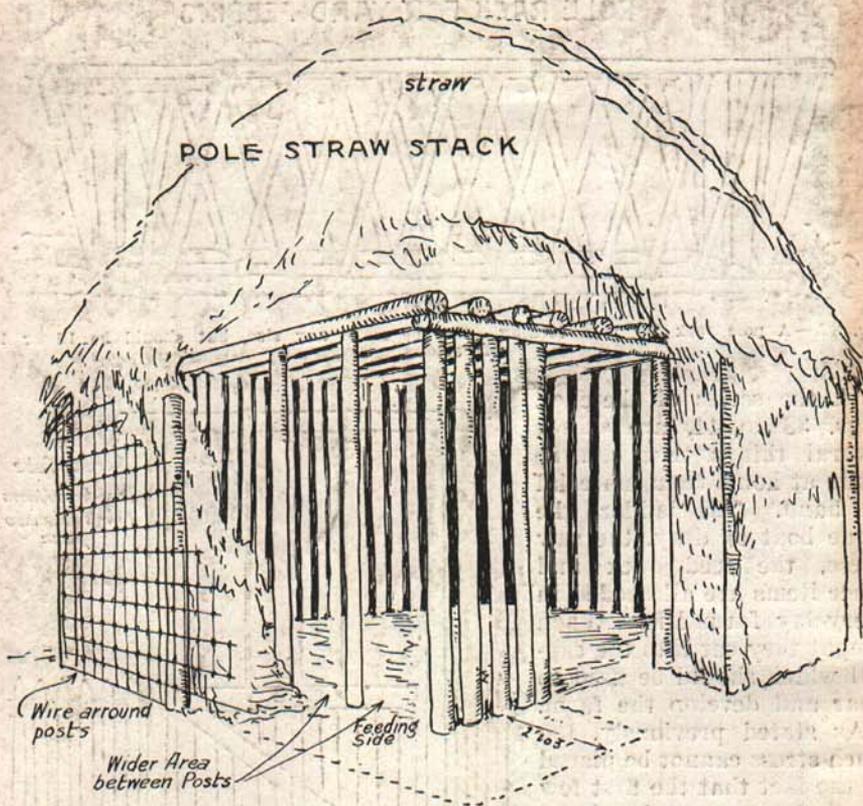


Fig. 44.—A pole frame, over which the straw is piled. The poles are close together on three sides, so that the cattle can eat from only one end. In this way, only one side has to be watched and kept covered.

