

checked to receive the sheathing. It is generally preferable to have a sill of the same bolted to a stub wall at the bottom of the division. This insures the pen divisions remaining in place.

7. The roof should be framed with 2x6-inch rafters, 2x6-inch collar beams and as per plan. The rafters to be covered on the outside with one ply of rough boards, one ply of building paper, and with good quality cedar shingles laid 4 1/2 inches to the weather, well nailed with two galvanized shingle nails per shingle.

8. Probably the cheapest and most satisfactory floor consists of 1-inch rough boards laid with 3/4-inch spaces between. This method allows the straw in loft to absorb moisture and facilitate ventilation. The floor of loft, of course, must be kept covered with straw or the pens below would be very drafty. The greatest objection to this method is the dust falling into pens below. The tight loft floor and sheathing of ceiling of pens is the alternative which is more costly.

9. The lower sash of the window is bolted flush with the inside of the frame and the upper sash of the window is hinged to the top of the lower sash and fitted at the top with a check chain and spring catch so that it may be opened inward and provide extra ventilation when necessary. For very severe climates storm sashes well fitted on the outside of the frame may be necessary for the winter months.

10. The pen fronts over the troughs should be hinged at the top to a 3x5-inch headrail and open inward into the pen to facilitate feeding. Two small iron stops on the outside wall prevent the door from coming out into the passage, and a sliding bolt at the bottom on the outside shall secure the door when closed. Good, heavy home-made hinges, so made that the pigs cannot root either the doors or the fronts out of position, will be found very satisfactory.

11. All doors should have cement sills. The walls shall be checked out so that the doors are only a few inches above the floor level. There might be provided in each pen a vertically sliding door to allow the pigs access to the yard. A cord running over a pulley across the pen to the passageway allows ease in controlling this door.

12. Cement troughs will be found cheapest and most durable.

13. The ventilation should consist of a fresh air intake for each pen, and foul air outlets leading from the ceiling of the piggery to the peak of the roof. A hood or cupola should be constructed over the end of foul air ventilator on the roof.

14. The outside of the piggery should be given two coats of paint or white-wash. This might be considered extravagant by many farmers who do not realize the keeping properties of paint or appreciate the attractiveness of a well-painted building, which is one of the best advertisements of a prosperous farmer. Well-painted buildings add very materially to the sale value of any farm and always prove an excellent investment. The interior of the piggery may be painted or white-washed when necessary.

15. A litter carrier over the centre of the pens, installed in such a piggery, might be found a cheap investment in order to keep a sanitary, clean building.

16. Special care should be taken in grading the floors of the pens and grooving these floors and passages as per plans, to facilitate proper drainage.

The exact cost of this building depends on the local cost of lumber, cement, labor, etc., as well as the finish and painting which the farmer may choose and the labor which he performs on the work. Undoubtedly, if rough lumber is used throughout, the cost will be comparatively low. A fair estimate based on these qualifying factors would be \$450.

Material List for Piggery.

	Bd. ft.
Sills—1 ply 2" x 6"—140' x 2" x 6"	140
Plates—2 ply 2" x 6"—280' x 2" x 6"	280
Posts wall—8" x 2' x 6' at 24" C—80P x 8' x 2' x 6 inches.	640
Posts—SP 4" x 4" x 5'.....	64
4P 5" x 5" x 5'.....	50
Girts—295' x 3" x 8'.....	400
Joists—26 pieces—18' x 2" x 6".....	468
Rafters—50 pieces 14' x 2" x 6".....	700
Collar beams—14 pieces 6' x 2" x 6".....	84
Wall board rough 1".....	1,600
Wall board planed one side 1" dressed 8" to 10" wide.....	1,600
Battens for wall.....	1,000
Flooring of loft 1" rough 3/4" apart.....	1,400
Roof boards 1" rough.....	1,400
Water tables, finish boards, etc.....	140
Sheathing for vents 7/8".....	200
Sheathing for pen divisions and fronts 1".....	50
Sills for divisions 2" x 5' x 12' (4P).....	70
Caps for divisions 21" x 4", dressed.....	
Doors and window frames and sashes, see plan.....	
Chimney, see plan.....	
Hardware including 2 ply bldg. paper in wall.....	
Total lumber—board feet.....	8,886

Concrete rough floor 3" deep—216 cu. ft. }
 Concrete finish coat 2" deep—144 cu. ft. } 15 cu. yds.
 Concrete mangers, 27 cu. ft.

Modifications.

A reasonable amount of warmth is necessary for young and fattening pigs. For this reason the ceiling must be kept reasonably low—generally speaking not more than 8 feet and not less than 6 feet at the post. If a single-story piggery is desired, it is generally advisable to put in a false ceiling at a height of approximately 6 to 8 feet, and fill the space between the ceiling and

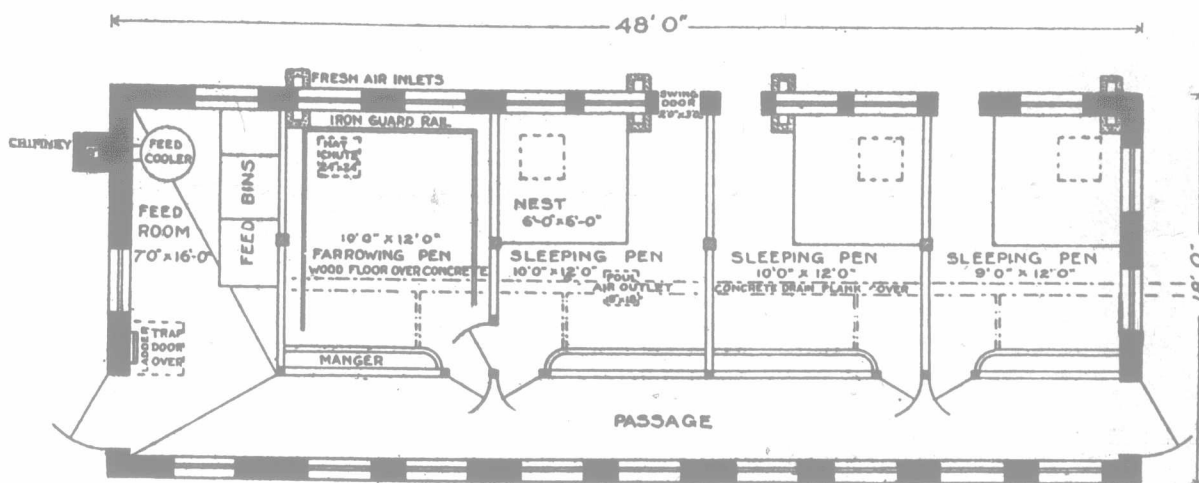


Fig. 5—Floor Plan of Permanent Piggery.

rafters with straw in order to insulate the ceiling and provide also an absorbent for moisture. The single-story piggery with the high or monitor roof, the ceiling of which is the underside of the rafters, is generally difficult to ventilate and, consequently, damp and cold.

The drainage system here described consists of a concrete gutter with a plank cover. The outlet of this is a tile through the wall at end pen.

jointly. This price, 2,500 guineas, is the highest ever paid for a Holstein in Britain, the previous best being 1,700 guineas given by Messrs. Brown themselves. At their sale the Browns averaged \$1,048.24 for 59 lots. There is big money in cattle in Britain at the moment.

ALBION.

The Trend of Prices.

Good prices for Aberdeen-Angus cattle have been a feature of some of the recent auction sales in the United States. On October 17, J. W. Hanna, Tarkio, Mo., sold 41 head at an average of \$313. The 30 females averaged \$337. Bulls were not in such good demand and this reduced the average considerably. At Burlington Junction, Mo., on October 15, C. D. & E. F. Caldwell had a very successful sale, disposing of 54 head at an average of \$736. The 46 females averaged \$735; and the 18 bulls around \$747. The top price was \$2,650 paid for Blackcap 59th and her heifer calf by Epistos. An average of \$241 on 42 head was realized by Robert Larmer, Stanberry, Mo., on October 16. The females were wanted most and the 39 cows and heifers averaged \$254.

In the meantime Herefords have been moving well and bringing good prices at auction. M. I. Masterson & Son, Audubon, Ia., on October 11, sold 78 head at an average of \$354. The 58 females averaged \$380, and the 20 bulls, \$278. Another very successful sale was held by J. A. Johnston, at the same place, on October 18. At this time 43 females averaged \$466, and 5 bulls, \$616.

At a combination Shorthorn sale, held at Heyworth, Ill., October 16, 40 head averaged \$266. Noel and Winnings, at Lake City, Ill., October 17, dispersed 63 head making a general average of \$291.

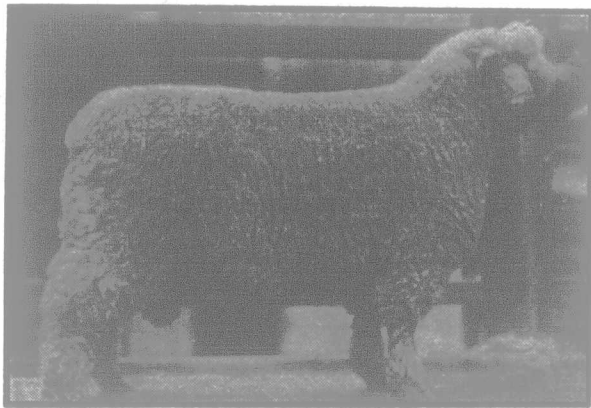
Crossing Different Breeds of Sheep.

With all the breeds of sheep we now have there are still those who are not satisfied and seem to be obsessed with a desire to cross them and arrive at something altogether new or different. Others again select the ram nearest at hand, regardless of breed, and, with him top their ewes which have, perhaps, been graded up with sires of another breed. Certain crosses for range purposes have proved expedient and successful, but the average farmer who attempts to combine the good points of two distinct breeds by crossing is likely to meet with disappointment. Hardiness, the best mutton qualities, the most desirable kind of wool, size, fecundity, and all the good points are not combined in any one breed but when one attempts to fuse these virtues into a new strain by crossing he is liable to fail for reasons admirably set down in an article contained in the "Transactions of the Highland and Agricultural Society of Scotland." In regard to this subject the writer says:

"Experiments have shown that one of the common results of cross breeding is to produce types which show little or no affinity to either of the parents, but rather resemble some more or less remote ancestor to which they are said to revert. This statement would appear to apply more particularly to cases where the two parental breeds are widely different or only distantly related, and since, in the case of sheep, the more primitive characters, speaking generally, are those which are economically inferior, there is a danger that in attempting to create a new variety by cross breeding, instead of improving our stock, we may induce reversionary changes towards an ancestral type of little commercial value. Moreover, if the crosses are inter-bred, the undesirable points may be perpetuated. But such considerations are not applicable to cases where the two parental breeds are of closely similar origin and they will not deter the scientific breeder from utilizing the knowledge gained by Mendel's discovery in attempting to combine the favorable features of suitable breeds.

"Meantime the practical agriculturist, who does not directly concern himself with experimental research, must be encouraged to take every precaution to maintain the present breeds of sheep in all possible purity. They may not be perfect, from the Mendelian point of view they may not be 'pure', but of their kind they are useful, and at present, at any rate, they are very much the best to be had.

"Whether it will ever be possible to improve them further must depend upon the outcome of future investigation. The animal organism is not infinitely plastic;



Stewarts 257.

First-prize Oxford ram lamb at Guelph Winter Fair, 1916, and at many local fairs, for Bruce A. McKinnon, Hillsburg, Ont.

of \$3,187.20 for 24 bull calves and of \$1,447.78 for 11 heifer calves. Duthie got 1,700 guineas for the red roan calf, Eclipse of Collynie, also sired by Max of Cluny, the Earl of Moray buying him. He got 1,000 guineas for Staff Officer, a son of Ascott Clipper, and the same figure for Collynie Master Lavender, a son of Masterstroke. He also received 750 guineas for the heifer calf, Collynie Princess 29th, sired by Golden Cupbearer, and bought by W. M. Cazalet for his herd at Tonbridge in Kent.

Following Duthie's sale came James Durno's at nearby Uppermill and he averaged \$1,618.38 for seven heifer calves and \$565.30 for 13 bull calves. The Prince of Wales' representative paid 800 guineas for a roan heifer calf, Orange Blossom, by the Collynie-bred Mesmerist and that was the highest price on record for a Shorthorn heifer calf of the age—less than seven months—a record that lived 48 hours.

Two days later at Sanquhar, at the dispersal of Messrs. Law's herd the sum of 1,500 guineas was paid for a red heifer calf of the Clipper family by T. A. Buttar, the famous Shropshire sheep breeder of Corston, Coupar-Angus. Eight Clipper calves averaged \$3,679.02 and Laws got a general average of \$1,302.48 for their 30 head sold. All told, during a week of Scottish Shorthorn sales 473 head were dispersed for \$387,468.36 or an average of \$819.12 apiece.

To get back to the 2,500-guinea Holstein, he was offered at Messrs. A. & J. Brown's sale at Hedges Farm, St. Albans, Herts, and was sired by an imported bull, Folke 2nd, out of a 1,300-gallon imported cow, Foukje 3rd, and he was bought by two gentlemen acting con-