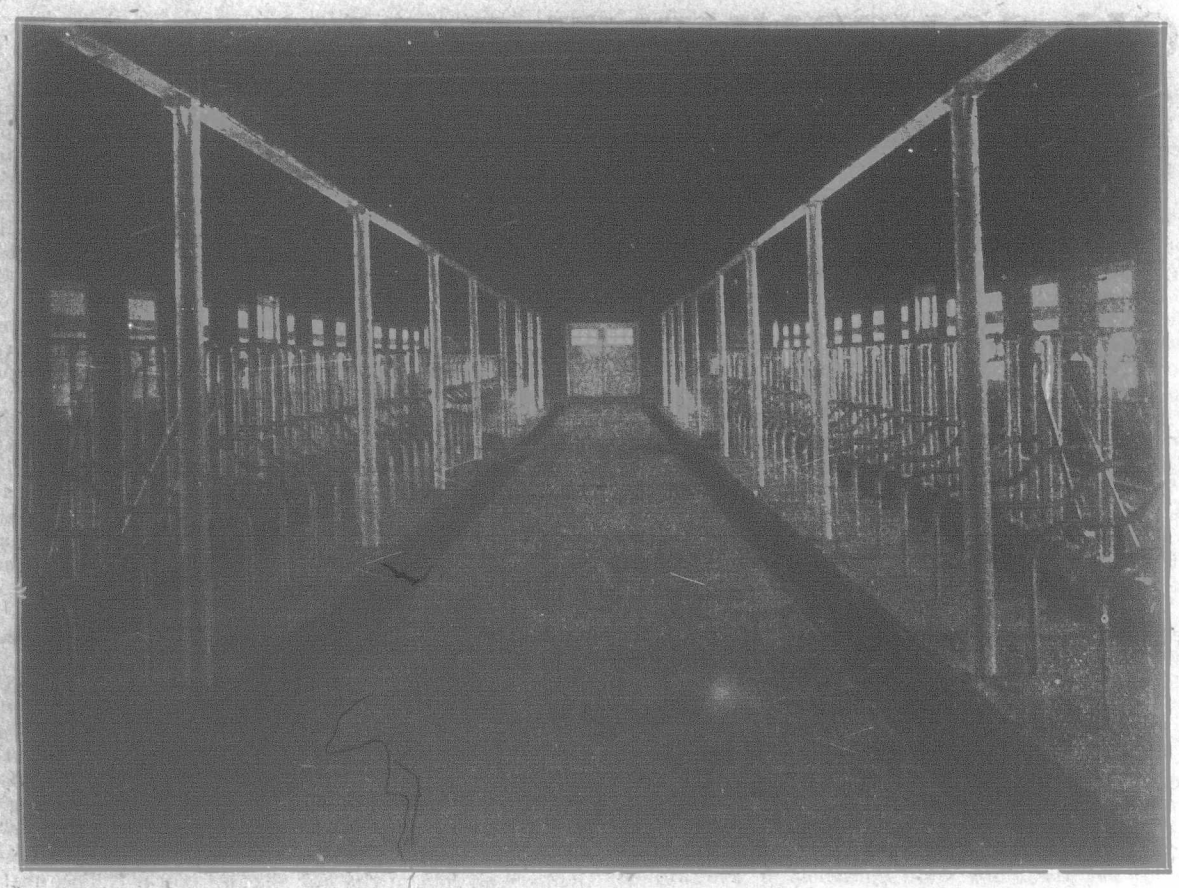


Interior of Dairy Barn.

Cattle stand back to back. Each side is divided into two sections, 20 cows to a section.

bor's, and when the cows are through with the feed, they may be pulled up to allow the mangers to be thoroughly flushed out. All the cows are tied with stanchions.

The system of disposing of the drainage or liquid manure is an up-to-date one. Drains carry this material from either end of the stable to the center, where they join into one large main, leading out to a large concrete cistern, with a tight concrete top. This cistern is fifteen feet deep, eighteen feet in diameter. From it the liquid is pumped into a tank and applied to the land as required.

Light is undoubtedly one of the greatest factors in the prevention of disease, and it is well considered in this barn, where there is a window every five feet on either side containing twelve lights ten inches square, the uppermost row of panes being separate from the main window as a fan-light or transom. Besides being used for light, these windows are the inlets of the ventilation system. The windows and the fan-lights are hinged at the bottom; the windows are placed about two and one-half feet from the floor of the stable, and are so hung as to open into the stable about ten or twelve inches at the top, being held there by a simple device, and thus the incoming fresh air is turned upward in the stable to prevent direct draft. The system is known as the Armstrong window-valve system, and is the design of the Assistant Provincial Secretary. The outlets are placed every eight feet in the hollow cement-tile wall directly opposite the solid buttress, built up on the outside to strengthen it. These hollow tile carry the foul air up to the ceiling of the stable, where they connect with galvanized pipes running to the ventilators on top of the barn.

A space of twenty-three feet ten inches between the cow stable and feed-barn basement is used as a mixing room. This is directly between the two silos, which have chutes built up them to be utilized for hay and straw, as well as for the silage.

The calf and bull stalls are under the feed barn, one end being used for the calves, the other for the bulls. There are six calf stalls, with stanchions to tie forty-eight calves. The calves are all tied while drinking or feeding. This has been found to be a sure preventive of the bad habit of "sucking." All that is necessary is to keep them tied about twenty minutes after they are fed. The calf mangers are of cement, just wide enough to set a pail in. Milk and water is fed from the pail. This is to ensure cleanliness. The partitions between each two stalls are removable to make one larger stall if desired. The bull stalls are eight in number, built with removable partitions and galvanized-iron mangers. The entire fittings are metal.

The root cellar is situated under the barn approach. At present this is all whitewashed, and is being used as a dairy, the butter being manufactured by prison labor in this room.

THE HERD AND FUTURE PLANS.

The dairy herd as at present constituted consists of fifty cows in milk and fifty-five promising young heifers coming on of grade Holstein breeding. This herd has been established only a short time, but individual milk records are being kept, and the butter-fat test is used as well in the determining of the good and the poor cows. The herd is being improved by judicious culling on this basis, and in the near future the Guelph Prison Farm will have one of the best and one of the largest herds in America, for it is intended to build another barn, the duplicate of the one now constructed, and to put up a modern butter factory between the two, where butter will be made for all the Government institutions in the Province. The milk from the cows will be placed in cans on a steel track, leading directly from the stables to the factory, where it will be pasteurized, separated, cooled, the cream ripened and churned, the butter made up and placed in a refrigerator to remain until needed. This factory will be completed by the New Year.

A new material is being used in the stuccoing of all the cement structures inside and out. It is called alca-plaster, and is an alumina-magnesia-calcium, made up of 85 per cent. hydrated lime and 15 per cent. alca, and capable of holding up to six parts of sand to one of the combination. It makes an economic finish of granite-hardness, waterproof, at less cost than plaster.

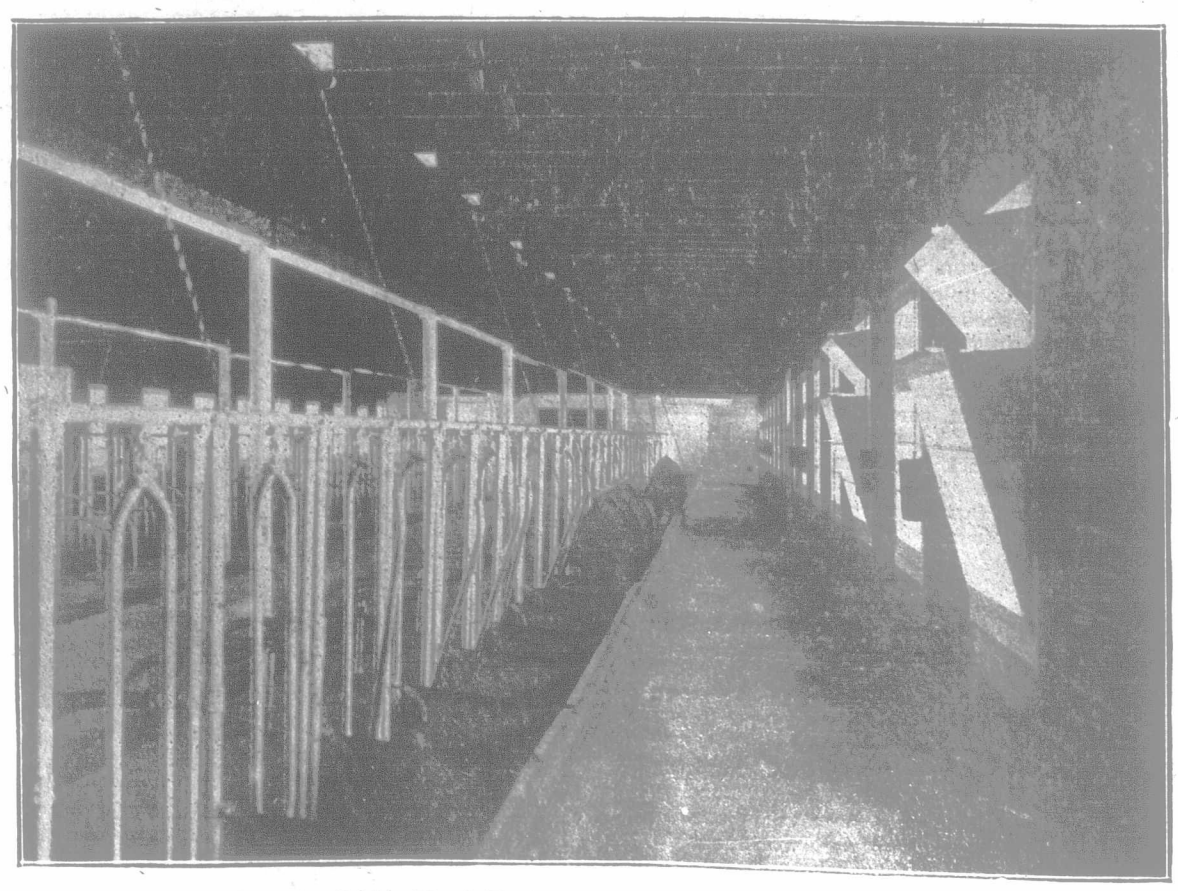
THE VALUE OF THE WORK.

This is the beginning of the work on the farm. This fall a large portion of the plowed land is being ridged up for the winter. The farm is to be operated on a strictly practical economic basis. Experiments will be conducted on a large scale, under conditions as they obtain on the average farm. Nothing will be bought that can be produced on the place. For instance, shade and ornamental trees and shrubs are needed, and all these are being propagated in a two-acre nursery on the farm. During the next few months new pig-pens, horse barns and other farm buildings will be erected with just as much concern as was exercised in the building of the dairy barn. All the work will be done with the labor at the farm and in another twelve-month it will likely be the best equipped 840 acres in Ontario.

The work that Mr. Todd and the superintendents and farm managers of the several Provincial institutions in Ontario are doing is a work which farmers generally would do well to follow. For an example, this year has been particularly favorable to the spread of potato-blight and many growers have lost heavily. The potatoes at these institutions have been kept thoroughly sprayed, and the blight was checked to such an extent as to do little or no damage. This spraying was not done on one acre, or ten acres, but on hundreds of acres, situated in several parts of the Province. Surely spraying is effective in the control of potato-blight. In this connection it may be mentioned that the Delaware variety has proven very successful and is of finest quality.

Another instance of a good example for farmers was in the mustard spraying as carried on at the Brockville institution. This farm, recently purchased, was badly overrun with wild mustard, and last spring over one hundred acres of this was sprayed with blue-stone solution and destroyed without injury to growing crops.

The four articles, of which this forms the final, have dealt with agriculture on the farms of as many Provincial institutions. A good and lasting work is being done both for the inmates and in the advance of agriculture. People are good imitators, and while it is impossible to follow all the agricultural undertakings as they are worked out in connection with these farms, there are many commendable features which may be imitated on a smaller scale by the man on a fifty, one-hundred or two-hundred-acre farm. It isn't the magnitude of the work that should appeal to the average farmer most, while this is a strong point in favor of the project as it applies to the economic and curative side of the undertaking, but it is the system. No farm should be operated without a system. Rotations are necessary on every farm. Dairy records are the only true measure of the herd. Light, ventilation and sanitation are necessary in every stable. Weeds and diseases must succumb or the crops will. The right crops must be grown on each field to produce most suitable feed. Spraying, pruning and orchard cultivation are absolutely necessary to success. These are a few of the points touched upon in these articles. There are others. Ideas in constructing buildings and lay-



Feed Passage in Dairy Barn.

Showing mangers with galvanized partitions hung on angle irons and lifted by weights. Also the window-valve system of ventilation, windows hinged at the bottom.