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the very simple reason that the irrigated field can be made to produce crops that will give a much larger return per acre than wheat, oats or barley, no reason exists why even cereals cannot be successfully produced under artificial watering, and at a lower cost per bushel than on non-irrigated land.

The objection may then be raised that the cost of water per acre, and the application thereof, would be prohibitive in the case of cereal crops. This is a fallacy. The difference in cost per acre between conserving moisture by summer-fallowing and providing it by irrigation in Southern Alberta is largely in favor of the latter. The cost of proper surface culture of fallow lands would not be less than \$2.00 per acre for the season. The cost of water would be 50 cents per acre, and the application thereof would not be more than

(3) Plants that will respond to irrigation during most years, namely, oats, six-rowed barley, soft winter and spring wheats, and forage crops adapted to dry-land conditions, such as Western rye grass, Bromus inermis, and other semi-arid grasses.

(4) Plants that will give increased yields under irrigation during occasional seasons only, namely, hard winter and spring wheats, flax and rye.

The above classification of northern economic plants presents the irrigation question in a nutshell. No practical agriculturist can fail to recognize the fact, that the scope for irrigation in northerly latitudes, as indicated, is enormous, and that this system of farming will soon occupy an important sphere in the agricultural operations of Southern Alberta.



Headgates of the C. P. R. Irrigation Canal.

another half dollar. This shows a considerable margin in favor of irrigation. The capital cost of an irrigated acre would not exceed the cost of two acres of non-irrigated lands required under the summer-fallow system. On the top of this is the certainty of water supply under irrigation every year.

IRRIGATION IN NORTHERLY LATITUDES.

Leaving out of the question the belts producing the citrous and deciduous fruits and tender vegetation of all kinds, and confining our attention to that portion of the continent of North America where the agricultural lands are devoted to the production of the hardier crops, the standard economic plants raised on the average farm there may be classified as follows in their relation to irrigation:

(1) Plants that cannot regularly be produced profitably without irrigation, namely, alfalfa, clovers, sugar beets, superior malting barley, tender vegetables and strawberries as a market crop.

(2) Plants that can be irrigated to advantage every year, namely, field peas, garden stuff, trees, small fruits, rape, timothy, and other forage crops requiring considerable moisture.

ANIMAL HUSBANDRY THE FOUNDATION.

By consulting the above classification, it will be evident to the observing farmer that the highest development of irrigation farming is not in any way associated with cereal production. The latter will probably be a feature of the irrigated farm in the earlier and cruder stages thereof, and until the soil is sufficiently worked up to admit of more intensive effort. But the irrigated farm will not reach its highest degree of productiveness until it is devoted almost entirely to the growth of fodder crops of all sorts, chief amongst which will be alfalfa, and until these crops are consumed on the farm and the waste returned to the soil. In other words, the highest development of the irrigated farm in Southern Alberta will be, more or less, coincident with the expansion of the various branches of animal husbandry, which is the basis and foundation of farming under artificial watering. When this destiny has been realized, Southern Alberta will fill the same place in Western Canadian agricultural operations as the corn-growing and cattle-finishing States of the Middle West occupy in respect to the whole Union.

(Continued on page 67.)



An Irrigated Farm near Strathmore, Alta.

Sparrows and Road Taxes.

Editor "The Farmer's Advocate":

Thomas Brooks' article on the sparrows was good. If yourself or Mr. Brooks, or anyone else, can tell me how to prepare poison on grain, or anything else that the sparrow will eat, I will be under an everlasting obligation to you or them. If every fowl and cat on the farm were destroyed through getting the poisoned grain I would still be dollars ahead. The sparrows commence on the wheat as soon as it comes out in head, and stay with it until it is marketed. I am satisfied \$100.00 a year will not cover my loss from the dirty little things. I find they are as sly and cunning as a fox. We made a raid one night with lanterns in the barn, got 167; there was a nice flock left, but we could not find them again at night. Had a boy for six weeks, with a shotgun during holidays, but that was expensive; hardly ever got more than a sparrow a shot. The flock grew and increased day by day. If I could find some way to get rid of the pests I think it would meet my extra tax on the country road system.

S. A. FREEMAN.

Oxford Co., Ont.

Sparrow Contest for Oysters.

Editor "The Farmer's Advocate":

I see some contributions in your valuable paper re sparrow nuisance, and the best mode to help abate their increase in our country. I thought it would be worth the time and space to inform your readers of the plan that was adopted in our neighborhood a short time ago.

The young men of the district appointed sides having captains, referee, etc., and about ten or twelve on each side, taking each a section of the township (about three concessions), and making a challenge for an oyster supper, to be given by the losers to the winning side, they (the losers) each paying \$1.00 to provide it. Though time was limited to three or four days, when all were collected the winning side had over 1,300 birds, while the other had over 1,000, all got in three or four days by shooting and catching, which is very effectually done at night in old barns, etc. It seems to make them scarce in a short time. The supper was provided, and all had a good time.

W. F. J.

Peel Co., Ont.

THE DAIRY.

How Has Your Factory Done?

Now that the season for the annual factory meetings is on, and accounts for the year are available, patrons would read with a great deal of interest brief statements of the results of the past year's work in make, price, pounds of milk per pound of cheese, cost of making, improvements in factories or practice, such as pasteurization of whey, proceeds, and returns to patrons per cwt. of milk. Patrons of each factory naturally like to compare results with those of other factories. Let us hear from the secretaries of cheese factories and creameries.

Buttermakers Should Adopt Uniform Methods.

In Western Ontario the creamery business has been compelled to operate upon the cream-gathering system, and buttermakers, in adapting their methods to the new conditions, seemingly have not yet developed the same uniformity as was practiced before the advent of the hand-separator. Guided by the dairy school teachings and the instruction from the Dairymen's Association officials, the need and value of pasteurization is generally understood by our makers, and in many instances put into practice.

Based upon the results of efficient pasteurization, it would appear reasonable to anticipate the development of practical uniformity of buttermaking methods within a few years. The effect of pasteurization upon unclean-flavored cream has been a debatable question, but it is now conceded that the benefits to be derived from pasteurization increase in the same proportion as the quality of the cream varies from perfection. This does not imply that bad-flavored cream which has been pasteurized will necessarily produce as fine an article as that produced from good-flavored cream after pasteurization, but it means that the inferior cream will derive greater benefit from pasteurization, seeing that it will have its bad flavor eliminated almost entirely. From this fact we arrive at the conclusion that by means of pasteurization we can command a cream supply of uniform quality in the same degree as a uniform quality of milk could be counted on in the old days, and hence, from this point, there is no reason why our buttermakers should not adopt uniform methods of manufacture which would surely redound to their credit, and to the reputation of creamery butter.

In considering what method to adopt, one's