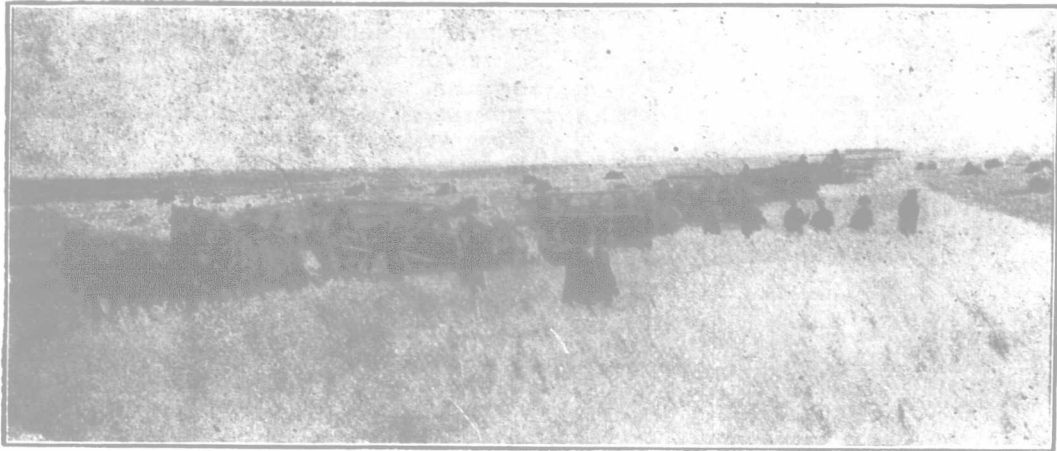


observe when a resident of Cleveland in the early days of its invasion of northern Ohio. Great numbers of the beetles were seen on bright days in spring and early summer, with outspread wings, being carried directly eastward by the wind.

It has also been disseminated largely by railroads and by lake vessels, and has thus been able, through the direct agency of man, to cross the more barren plains bordering its native confines and the barriers made by large bodies of waters. So it will be seen that the winds and waters and eastbound trains have all aided in its dissemination eastward. Riley, from whose works the present account of the early distribution of the insect has been taken, observed the beetles on Lake Erie in 1870 on various floating objects, and the writer in subsequent years saw the borders of the same lake lined for a foot and more with the hordes of these beetles that had been blown into the water and had then been cast up on the shore.



A FALL WHEAT FIELD AT PINCHER CREEK, ALTA.

Alfalfa Seed to the Acre.

In our last week's issue we suggested to an enquirer from Alberta that he sow from five to twelve pounds of alfalfa seed to the acre, and have since had our attention called to the fact that this is not according to the general teaching. This we readily admit, but one of our most trusted advisers in Alberta who is growing alfalfa had written us about the middle of August to say that his alfalfa was looking fine from a seeding of five pounds to the acre and that as between what he had sown and the amount generally recommended he had saved the subscription price to the FARMER'S ADVOCATE for two years on each acre. Other experts on growing alfalfa in the dry climates south of the line, say if they can get one plant to grow on each square foot of the land they are well satisfied that the seeding is thick enough. In more humid climates this might not be thick enough, but for Alberta we would not advise as thick seeding as in countries where the rain fall is heavier and where the surface becomes caked hindering the growth of the young plant below ground. Our Alberta friend also suggests that a considerable saving in cost of seed can be made by getting the land in good shape for holding moisture and for the plants to grow. He further ventures the opinion that he would risk sowing in September when the land was in fine tilth and could be packed down for winter. Of course in the matter in the amount of seed to sow to the acre we do not wish to dogmatize nor to base our opinions upon the results of one man's work. We know there are some soils that require twice or three times the amount of clover or grass seed to get a catch that others do, and that while from fifteen to twenty pounds of alfalfa seed is generally recommended and frequently sown, yet a seeding of ten to twelve pounds on well prepared ground would be sufficient to start with and demonstrate the suitability of the land for the crop, also the success of the farmer in preparing the land for the smaller seeds.

DAIRY

Conditions Effecting Churning.

The process of causing the particles of butter fat to unite into masses, so that they may readily be separated from the milk serum, is called churning. Such union of the particles of fat is ordinarily brought about by agitation of the cream in a suitable vessel, called a churn. If milk or cream be agitated at a temperature somewhat below the melting point of butter fat, the particles of fat, as they pass by one another, agglutinate themselves into masses, and, the process being continued, the first formed masses continue uniting, until finally the whole body of fat may be brought together in a practical solid mass. The conditions influencing the separation of fat in this way are first, the viscosity of the milk; second, the ripeness of the cream; third, the temperature; fourth, the nature of the agitation; fifth, the quality of the globules of fat.

cream. These conditions usually occur in the late fall and early winter months, when the cows are far advanced in lactation, and when they are often fed on dry food of a character to make hard butter fat. An improper ripening of the cream often ripens these conditions, so that complaints of difficulty in churning are usually numerous all this period of the year. The course to be followed in cases of this nature is, first, to add to the food of the cows something of a succulent nature, that will cause the secretion of milk to be greater in amount and not so viscous. Second, to further lessen the viscosity by bringing about a vigorous lactic acid fermentation in the milk, and in extreme instances, perhaps, diluting the cream with warm water or weak brine. Care must be taken that this dilution does not go too far, or difficulty in churning from the thinness of the cream will result. The production of lactic acid in good amounts and within a reasonable time seems to be an important means of overcoming these cases of difficult churning. The production of lactic acid is hastened by the use of a culture or "starter." Bring the temperature of the cream to about seventy degrees F. and add about one pint of good, flavored sour skim-milk or butter-milk, which, if you have not been making good butter yourself, should be procured from a neighbor who has. Some home butter makers whom we know use commercial cultures in bringing about this lactic acid formation or ripening thus controlling the ripening from the start. It is not likely that some of the lower fermentations, which take place at temperatures below which the lactic acid germs are active, may have a retarding effect upon the churning. These cases of difficult churning are frequently accompanied by the production of an acid or bitter putrefactive fermentation product in the cream.

POULTRY

The World's Poultry Production.

[Edward Brown, F.L.S., before the Second National Poultry Conference, University College, Reading, England.]

My contributions to the papers at the Second National Poultry Conference is largely statistical, but none the less of interest, and it may be, of value. Unfortunately, it is by no means so complete as was anticipated, due to the fact that in comparatively few cases is any attempt made by the Government authorities to estimate, even approximately, the production, and that so many countries do not export eggs and poultry, consuming all the produce at home. This is especially the case in the smaller European and American States, and in Asia. The British Colonies in Africa do not meet their own requirements, and import to make up the deficiency between demand and home supply, whilst the Antipodean Colonies are only beginning to export, as, heretofore the poultry industry has been undeveloped, and not beyond the needs of the resident population. But such facts as are available are here presented, and it may be that in the future, when increased production all over the world has made more apparent the importance of this industry, they may form a basis for comparisons.

One of the objects with which this inquiry was attempted was to see whether it was possible to form a fairly reliable estimate of the annual crop of eggs and poultry, but the result has been to indicate that the time for that has not yet arrived, and nothing more than a very speculative approximation can be attempted. From only three countries have returns been received in this direction, namely, France, Canada and the United States. In 1903 I prepared for the Royal Commission on Supply of Food and Raw Material in Time of War, an estimate as to poultry and egg production in the United Kingdom, relating to the year 1902, and I have brought these up to date, giving the figures of an estimate for our own country.

ESTIMATED PRODUCTION.

	Year	Eggs and Poultry
United Kingdom	1906	£11,500,000
France	1899	17,223,940
Denmark	1893	1,599,090
Canada	1905	2,015,568
United States	1899	58,922,900