

Ranting About the Embargo.

To the Editor "Farmer's Advocate":

Periodically the embargo anvil is hammered until the welkin roars, and everybody is much edified thereby. The Scotchmen, anxious to feed Canadian stores, jump on the Sassenack farmers (who, by the way, are all protectionists) and accuse them of discrediting, on the score of disease, the Colonial cattle.

So far as disease relates to cattle in Great Britain and Canada, all well-informed persons know that of the British pure-breds many of the Angus and Shorthorns are pretty badly infested with tuberculosis, and, also, that many herds fail to yield their normal annual increase, on account of contagious abortion; while in merrie Enland swine fever (termed in Canada "hog cholera") is always about. The score of disease, then, is not one on which the British farmer is very tender. Unless his stuff dies in droves, or an unkind meat inspector fetches him up short, he is quite hardened otherwise to disease, and the Colonial is lacking in respect who mentions the appalling rottenness of some British herds above a whisper. We recall how, on one memorable occasion, in Britain, a vigorous protest was made re the Canadian Government's tuberculin tests, and the sentiment was expressed that no foreign government should dictate to them how to keep their cattle. How the silly yokels applauded the promulgation of an idea which meant, in other words, that they (the producers) would say what the market must take—a violation of trade ethics so gross as to be laughable. But, aside from the bugaboo of disease in Canadian cattle, in the minds of the majority of Britishers, what are the benefits to be derived by Canadians from the removal of the embargo, and at what cost?

In the first place, the removal of the embargo on Canadian cattle alone (we do not believe it will ever come off to Canada, but if it does, we expect the U. S. will share also) would mean the resumption of the ninety-day cattle quarantine all along our Southern boundary, and the American invasion of immigrants would be stopped entirely—which would be a disaster to the Canadian West. In addition, a large force of inspectors would be needed, at a much-increased cost to the country—and where would be the gain?

The possibility of feeding range cattle, such as we see in the stock-yards at Calgary, Medicine Hat, Winnipeg, Schreiber, Montreal, and coming off the boats at the Birkenhead lairages, is not to our mind a rosy one; the docility essential is entirely lacking, and the insurance on lives of farm hands in Great Britain would at once become more costly.

As for the Eastern beeves, the people down there know enough to feed theirs to a finish; the land demands it. There are really no store cattle that Canada can afford to ship to Britain to be finished, but we will suppose everybody shipped their beef cattle as stores to the Old Country, and a big trade was established. If foot-and-mouth or some other bovine disease broke out in boats sailing from Boston or Portland, the store-cattle business would be at an end in 24 hours; and what a tremendous slump there would be in cattle, because the trend of business would again have to change from the marketing of stores to the marketing of finished beeves.

To our mind, for Canadians to excite themselves over the removal of the embargo is futile. They stand to gain practically nothing. The shouting Scotchmen have buildings and wharves, representing sunken capital, which they hope to raise by buying Canadian stores.

The need of Canada is the building up of a dead-meat trade, in which we can well afford to imitate the seniors of Buenos Ayres, who, as soon as they found they could not ship cattle to Britain on foot, embarked in the chilled-meat business on a big scale (vide J. A. Kinsella's report to the New Zealand Government), and are making a success of it. The dead-meat trade is the thing, and to it Chicago owes its reputation as a live-stock market. MANITOBA.

Picking Out a Cow.

A writer in an exchange says: "I have, first and last, picked out a good many cows, and have sometimes made expensive mistakes. I have also frequently succeeded in getting hold of a very good dairy animal. I have learned a few things about picking out cows that are of value to me, and may be to someone else. One of the things is that, where a cow can be purchased in the environs of a town, it is possible to learn something about her from neighbors. I frequently get on the track of a good cow by enquiring if there are any cows to sell in that neighborhood. The reply will be that So-and-So has a wonderful cow that gives milk eleven months in the year, and very rich milk at that. A good cow in a small place soon gets a reputation all her own. I approach the owner and offer the prevailing price. He, of course, refuses, and says he would not part with that cow under such and such a price, naming a price that he thinks high.

"But I, knowing that a good cow is worth a dozen times a fair cow and a hundred times a poor cow, do not regard the price as high. I look the cow over, milk her myself, and take some of the milk home to test. This I do by setting it over 'night in a straight glass. The method is a little crude, and a better way would be to use a Babcock tester, but the results are approximately correct. Even with a Babcock test a single test would count for little more than this test in an ordinary water-glass."

"In the main, I try to buy cows that are four or more years old, as at that time in life they have demonstrated what they can do as milk-producers. A heifer does not show what she can do, and I can't afford to experiment, when I can buy very good cows relatively cheap."

FARM.

Forecasting the Weather.

By R. F. Stupart, Director, Dominion Meteorological Service.

Frequently in the press and also in conversation it is apparent how very fallacious are the conceptions of the public of the work performed and the methods employed in the Meteorological Service of Canada, and also in Weather Bureaus of other countries. Some people seem to be of the opinion that meteorological forecasts—"probabilities"—are made from a study of the stars, and others again assume that the forecasts are simply guesses, based on a knowledge, we will say, that there is a storm somewhere on the continent, and that it is travelling towards a certain district at a certain rate of travel, and will, therefore, if nothing unexpected occurs, arrive at that district in an easily calculated time. Both of these conceptions are far wide of the truth, but as such fallacies are so prevalent, I shall endeavor to indicate clearly how meteorological forecasts are arrived at, and also point out some of the many difficulties there are to be overcome.

The Meteorological Office, familiarly known as the Observatory in Toronto, is under the Dominion Department of Marine and Fisheries, and is the central office for the whole of Canada. Records from every station in Canada are forwarded to this office; forecasts for every portion of the country, exclusive of British Columbia, are issued therefrom, and all observers are under the control of the Director at Toronto, who is in turn directly responsible to the Honorable the Minister of Marine and his Deputy at Ottawa.

There are 360 stations where meteorological observations are taken. In the majority of instances the observing is performed gratuitously, by persons who take an interest in such work, and who have been supplied with the necessary instruments by the Government, but at some outlying stations where voluntary observations cannot be obtained, small gratuities are allowed. Then at some 36 stations scattered at about equal intervals across the Dominion small salaries are paid; the observers are obliged to conform to certain regulations, to observe at regular hours, never omit an observation, and twice each day telegraph a report to the central office.

The telegraphic reports contain the following information: The height of the barometer (reduced to sea level in order that all stations shall be comparable), the temperature of the air, the weather, the direction and velocity of the wind, clouds, and rainfall, if any. These reports are forwarded from Toronto to the United States Weather Bureau at Washington, which bureau, in exchange (there is complete reciprocity in the weather reports), supplies the Canadian service with some 50 or 60 reports from various parts of the United States.

A very comprehensive meteorological chart is thus provided twice each day on which to base forecasts. The observations are everywhere taken at about 20 minutes before 8 o'clock, morning and evening, 75th meridian time, the instructions being that reports shall be filed at the telegraph office at the exact hour. At 9.45 the weather map is usually ready for the forecast official to issue bulletins.

As an example of his method, we will suppose that there is an area of low pressure over the State of Nebraska at 8 a.m. on a certain day; the previous morning—24 hours earlier—it was over Utah, and has since increased in energy. Now, it is obvious that if this area continues to move in the same course and with the same velocity it will pass across the Great Lakes, but the forecast official assumes no such thing; its previous course and rate of travel are simply two important factors to be considered in his diagnosis of the case; he does not assume either that it will continue in the same course or that it will continue to increase in energy; the relative position of other low areas and their probable effect on that over Nebraska must be duly considered; also the position of high areas and their probable effect on the various low areas; also the temperature prevailing over different portions of the continent must not be neglected, and due allowance must be made for its influence in producing rainy or dry conditions, as the case may be.

The official at Toronto endeavors to give the proper weight to each of the apparent facts, and then he judges as to what various movements and changes there will be during the coming 36 or 48 hours. Certainty is not possible in weather forecasts based on imperfect information, and in which the introduction of a single unknown factor in regions beyond observation, e.g., the

upper or middle atmosphere, may completely alter the course of events.

The problems to be solved in meteorology, considering the subject in a general sense, as well as with regard to the improvement of the daily forecasts, are numerous and intricate; unknown quantities abound; we are living at the bottom of the atmosphere; not all this bottom has been explored, and its ever-changing conditions as regards temperature are kaleidoscopic. Meteorologists all feel that the science of meteorology has not made an altogether satisfactory progress during the past twenty years, but observations have increased and multiplied, and good data now exist for testing theories. What hopes are there for the future?

In the Meteorological Office at Toronto, every cyclonic area which has passed across either Canada or the United States since 1871 has been carefully charted and studied, and it has been discovered that there is a very evident periodical shifting of the mean monthly tracks of cyclonic areas, and also a periodicity in numbers of storms, and the study of these facts and figures is pursued with a very cheerful hope that in the not distant future we may be able to connect the observed variations with solar phenomena. In a paper read before the Royal Astronomical Society of Canada four years ago, it was shown that there are strong evidences of the rainfall of Southern Ontario varying with the increase and decrease of sunspots; that the rainfall for two or three years immediately succeeding sunspot minimum is excessive, and that dry seasons then follow. The rainfall of the past three years has tended to corroborate this suggestion.

In Europe for the past few years much has been done in exploring the upper atmosphere by means of instruments carried to high altitudes by kites and balloons, and from these observations some very valuable knowledge of the upper currents and temperatures has been obtained. Then, again, there is ground for hope that the Solar physicist may render assistance in solving meteorological problems, but my hope in this direction is somewhat tempered by a belief that changes in solar radiation probably affect the earth's surface and atmosphere almost instantaneously, and that while it may be long before it is possible to show with almost absolute certainty that changes in terrestrial weather follow solar changes, it is less probable that the solar physicist will be able to forecast changes in the output of energy from the sun with sufficient accuracy to assist the meteorological forecasts very materially.

The earth as viewed from the sun only subtends an angle of less than one-third of a minute of arc, a mere speck in the universe, and it is almost inconceivable that at any particular time different portions of the earth's surface can receive radiations from the sun of different kind and intensity, except as modified by latitude and atmospheric conditions, and yet nearly every year the weather of some portions of our globe varies greatly from the normal, while in other portions it is just average, or varies in the opposite direction. These facts indicate the complexity of the problems to be faced, and the writer is in accord with Sir John Eliot, the president of the sub-section of cosmical physics in the British Association meeting of 1904, who spoke in favor of a more systematic co-operation among the meteorologists of the world, and a central meteorological office for the Empire.

Sir Norman Lockyer and Dr. W. S. J. Lockyer, at South Kensington, have for some years been devoting much time and energy to solar research, with the distinct object of tracing the connection between solar changes and terrestrial climatic changes, and we in Canada hope that the Director of the new Observatory in Ottawa will also conduct some such research and assist in the good work already being carried on.

In every country of Europe, in Japan, in the United States, and in the colonies of our British Empire, men of the highest ability and of untiring energy are now, and have been for years, devoting themselves to meteorological research work, but as yet the main problem is unsolved, and without doubt it will only be by a generous co-operation between the physicist and meteorologist, that by slow degrees, little by little, our knowledge of weather changes will be increased.

The synchronous weather chart is recognized in all civilized countries as affording the best system for weather forecasting, and in the writer's opinion, for short-range forecasts it will never be wholly superseded by any other.

Kent County Corn Growing.

To the Editor "Farmer's Advocate":

I will give you my experience in growing corn: The nature of our soil is clay loam and sand. We plant in hills 46 inches apart each way; three to five grains in a hill. Harrow once each way, with a Thomas smoothing harrow, slanting tooth if conditions are fit; that is, if land is well prepared and dry before corn comes up. Cultivate after corn is up three or four times with a John Deere double cultivator; first as deep as we can with fenders on to keep corn from being covered; to keep down weeds, conserve moisture, and assist in developing plant growth. I cultivate sometimes after ears are formed, and find the last cultivation pays in an increase of five to ten bushels per acre. I seldom hand hoe any lately, as help is scarce and high (I might add very poor, too).

I would say the success of a corn crop depends nearly one-half on cultivation, so that it pays to cultivate as often and as late as you can, and shortly after rain, as it hastens development and yield considerably, and pays every time.

FRANK SUITOR.

Kent Co., Ont.