

in 1911 exceed by over 1,000,000 acres and 65,862,000 bushels the estimates of 1910.

By Provinces, the total value of all field crops in 1911 was as follows: Prince Edward Island, \$8,846,700; Nova Scotia, \$14,297,900; New Brunswick, \$16,797,000; Quebec, \$103,187,000; Ontario, \$193,260,000; Manitoba, \$73,136,000; Saskatchewan, \$107,147,000; Alberta, \$47,750,000; British Columbia, \$1,290,000.

Owing to the exceptionally mild weather which prevailed during the fall and early winter, live stock are reported as having entered winter quarters in excellent condition. As a general rule, winter feeding supplies are ample.

ARCHIBALD BLUE,
Chief Officer.

Seedtime and Harvest.

The United States Secretary of Agriculture has directed an investigation to be made concerning the dates of sowing and harvesting, and that the results be published in a series of bulletins. The first of these, entitled, "Seedtime and Harvest; Cereals, Flax, Cotton, and Tobacco; Dates of Planting and Harvesting in the United States, east of meridians 102-104," has just been issued.

"Because southern latitudes are first to feel the advance of spring," says the bulletin, "it is quite natural to suppose that planting and harvesting always move northward with its advance. As a general fact, the progress of sowing and harvesting is northward, but there are interesting exceptions. Of cereals sown in the spring, sowing and harvesting always move in a northward direction, while of those sown in the late summer or fall, the sowing movement is always southward. Harvesting progresses northward in the case of all cereals, except buckwheat. Corn planting progresses northward; winter-wheat sowing moves southward. The harvesting of corn and of winter wheat progress northward, but the sowing and harvesting of buckwheat progress southward."

The sections of the United States wherein corn-planting begins simultaneously are shown by means of a map crossed by lines extending from east to west. As shown by this map, corn planting begins in Southern Florida and in Southern Texas about February 15th, in normal years. Fifteen days later it is in progress in northern Florida, southern Louisiana and central Texas, and by May 15th it has progressed as far north as southern Maine, New Hampshire and Vermont, central New York, northern Wisconsin, Minnesota, and North Dakota.

"In interpreting the map," to quote further, "it should be remembered that there are many causes which influence the times of sowing and harvesting, and, while a line connecting places which sow or harvest simultaneously will run in the main from east to west, there are curious irregularities, deviations here and there, depending primarily upon altitude, rainfall and character of soil. An increase in altitude is analogous to an increase of latitude, and, therefore, when these lines cross the higher altitudes, they will naturally bend toward the south. In regions of great annual rainfall, the line will also bend southward, due to physiological peculiarities of plant growth. While the waters of the Great Lakes undoubtedly mitigate the severity of the continental climate in that vicinity, yet they also delay seasonal changes, and thus retard spring growth, and hence cause a later harvest. This explains why the lines in the vicinity of the Great Lakes are bent southward."

Relative to the rate of progress of corn planting, the bulletin says: "At the starting point, near Brownville, Tex., planting begins on the average date of February 10th. The movement reaches the Texas-Oklahoma line on the mean date of March 12th, and, therefore, crosses Texas in 30 days, or at the rate of 18 miles per day."

"From the time this movement starts at the Texas-Oklahoma line, until it reaches the Oklahoma-Kansas line, 25 days elapse. The distance from one State line to the other is about 220 miles. Planting, therefore, moves northward through Oklahoma at the rate of 9 miles a day. The rate of progress through Kansas is 10 miles; through Nebraska, 19 miles; through South Dakota, 50 miles; and through North Dakota, 44 miles per day."

The soil temperature at which corn germinates has been ascertained by numerous tests in field and laboratory. The air temperature at which corn planting takes place in actual practice, however, has not heretofore been established, but from data assembled in this bulletin, it is believed to be approximately 55 degrees F. Air-temperature records at corn-planting time in the vicinity of 127 cities east of the Rocky Mountains are given in tabular form.

Compilations of dates of sowing and harvesting by States, by sections of States, and units (tracts 70 miles square), are given for corn, wheat, oats, rye, barley, buckwheat, flax, cotton and tobacco; maps and illustrations explain the text, and interesting discussions are given of the phenomena of seedtime and harvest.

The Farmer's Son's Opportunity.

One reason why so many boys leave the farm for the city is because of the failure of the father to take the boy into his confidence and make clear to him that he is not merely a "hewer of wood and carrier of water," but that he is in full partnership with him, and has a personal interest in the success of the work. Those of us who were raised on the farm know, of course, that it would be practically impossible for the father to always demonstrate this to his son by a cash consideration; but if the seeds of dissatisfaction are not to be planted, some greater consideration of the son's services will have to be made than that of merely board and clothing. If, say, the son knew that he would receive even a small percentage of the proceeds from the sale of a lot of hogs or lambs, or from the milk, to do with as he might like, to save or to spend, we believe, speaking from experience, that the arrangement would be mutually advantageous. The son does not like to feel under the obligation of going to his father every time he wants a few cents for some expenditure; and, besides, he should be in a position to lay up something for the "rainy day." The needs of a quarter of a century ago do not accord with the needs of the present day, nor did the boys of that time have the same facilities for investment as the boys now have. To-day we have practically at our door strong financial institutions which accept small amounts on deposit; and we also have the Canadian Government's great annuities system, in regard to which a word of explanation may not be out of place. It was approved by members of both Houses of Parliament, has at the back of it the security of the whole of the Dominion of Canada, and there could be no better or safer plan of investment as a means of making provision for old age. The payments may be spread over as many years as may be desired. The Government attends to all the details free of charge. For example, a payment of \$13—the price of one hog—made for a boy of ten years, and continued until he is sixty, will give him an annuity of \$215.20 for life. If the payments are continued until 65, he will receive \$335.73, or over \$120 a year more than he would receive at 60. The same annuity could be purchased for a boy of an older age at a little advance on the cost. If, therefore, a farmer's boy knew that, at the time when he shall be no longer able to work, he would have ample provision for the remainder of his days, and that if he died before drawing the first payment of annuity, all that he had paid in, with 3 per cent. compound interest, would be returned to his heirs, what a difference this would make in his outlook; how much more contented he would be to remain on the farm—for there is no occupation more honorable—and how much more independent he would be in his old age. This is worth the serious consideration of every farmer who has boys, and of every farmer's son who is old enough to reason for himself. The Government's system is, of course, available not only to farmers' sons and daughters, but to the sons and daughters of every other man who makes Canada his home, no matter what his nationality or creed may be. Literature explaining this provident system may be obtained at the post office, or on application to the Superintendent of Annuities, Ottawa, to whom letters go free of postage.

One of the amusing features of the Congressional Committee's enquiry at Washington into the trusts and the operations of the Sherman Law was the testimony of Andrew Carnegie, one of the two richest men in the United States. The little white-haired Scotchman told how he had built up his enormous fortune in the iron industry until he was able to sell out his interests to the steel corporation for \$420,000,000 in bonds. He expressed the opinion that the day of competition had passed, and believed the Government should regulate maximum prices. He thought the steel industry could get along just as well without protection, nor had socialism any terrors for him. He created amusement by saying that he had never heard of the Dingley Bill, and evidently he has not bothered his head reading the newspapers, on that subject, at all events.

Mechanical Pollenizer for Red Clover.

Since the abolition of old stump and snake-rail fences is depriving the bumblebee of the favorite shelter in which it used to nest, and in which the impregnated female bee hibernated, it is hopeful to learn through the subjoined item from the Country Gentleman, of a mechanical device invented to substitute for the bumblebee's alleged supposedly valuable services in fertilizing red-clover blossoms. We know nothing about the machine or its value, but feel warranted in at least giving publicity to the item for what news value it possesses.

"A device which the inventor characterizes as an artificial bumblebee is designed to take the place of that disappearing insect in the pollination of red clover. It consists of a huge brush with about two hundred vulcanized rubber tips to the square inch, which is driven over the field of clover when the bloom is full of pollen. The brush is adjusted to the proper height above ground, and, as the wheels of the light rig revolve the brush is slightly raised and lowered and gently shaken. This mechanical device is designed to do exactly the same work as the bumblebee, carrying the pollen from one blossom and depositing it upon another; but it does the work far more thoroughly and regularly. The results on fields where the new invention has been tried are said to be very favorable.

"A convincing method of demonstrating the value of the pollenizer was employed by selecting a certain field for the test, and using the machine on only half of it. In this way, conditions of soil and rainfall were the same, and any difference in the yield of clover seed between the two halves must of necessity be ascribed to the machine. The halves were harvested and threshed separately. The returns indicated the excellent work done by the pollenizer, and, in order that the statements might not be disproved, affidavits were secured from field owners and witnesses.

"It is considered advisable to go over the field several times, crossing it from each of the four directions, so that each clover head may be brushed, no matter which way it inclines. The labor involved in this operation is very slight, requiring the services of only one horse and a driver.

"The clover pollen is slightly sticky, and adheres to the myriad tips of the bristles of the brush, which rises and falls four times with each revolution of the wheels. This up-and-down movement is supplemented by a vibration, caused by a steel-spring tension, so that directly after collecting the pollen the vibratory motion shakes it off upon another blossom. Since the pollenizer would not be needed frequently during a season, it would be expedient for a number of farmers to own one in common. The further development of the invention will be followed with interest by clover-growers."

More Details re Electric Power.

Editor "The Farmer's Advocate":

It seems to us that most all the information asked by your correspondent was furnished in your issues of Sept. 21st and Dec. 14th. But, as you ask us to answer this, and as we have had several others of the same nature, we will do what we can to oblige, and answer them all in this way. From the different letters we have, we find your subscribers would like to know what steps were taken to get the line into the neighborhood, and a little more about the cost. Well, we know what we had to do, and we know now what it cost. In the first place, we were fortunate in living a quarter of a mile beyond the brickyard, where they have used electric power for some four or five years. We went to the commissioners in town; they sent the superintendent out to give us an estimate of what it would cost to install lights and power, and might say that his estimate was pretty near the mark. When they got us fixed up, a number of our neighbors to the south clubbed together, and had the line extended some two miles further. As regards cost, our five-horse-power motor cost \$115, and, with shafting and pulleys, together with wiring house, barn and milk house—23 lights in all, totalled up in the neighborhood of \$200. This is the cost of installation. As to running expenses, we are charged ten dollars a year for the privilege of having the five-horse-power motor in the barn, whether in use or not, one dollar per month for upkeep of line, and then on a meter rate of 2.33 per kilowatt hour for power. The lights are paid by flat rate of fifteen dollars per year. Our correspondent asks about electric storms. We have had no trouble so far, but, we understand, should not run the motor during a storm.

Oxford Co., Ont.

D. W. CLARK.