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EDITORIAL

Preserve the index. It may be worth many dollars in an emergency, besides saving us the necessity of repeating many replies.

Amid all the exquisite perfumes distilled in Nature's laboratory, what is there purer and sweeter than the fragrance of new-mown hay?

We deem this sentence, from our last week's Toronto market report, worthy of special prominence: "Farmers are warned against making their hogs too heavy, as all hogs over 220 pounds are being culled out at a reduction in price of 50 cents per cwt. from the above prices."

If the energy expended grumbling because it does not rain every few days in July were devoted to improved cultivation to hold the moisture already sent by Providence, the barn mows and grain bins would be filled nearer the top, and everybody wear a more cheerful face.

Federal subsidies to approved Thoroughbred stallions. Is this the entering wedge of a national horse-breeding policy, as they have it in England? A good deal of discussion is heard about encouragement of horse-breeding over there, but still the cavalry-mount problem confronts them in menacing proportions.

Quite a visionary suggestion was offered by a recent correspondent, who proposed that a number of farmers should pool their interests, selecting one of their number as manager, the rest working under his direction on a profit-sharing basis. Roots of property interest and sinews of inindividuality are much too strong for that, but many might co-operate to their great advantage in purchasing machinery, exchanging work, and so on, without signing off the title to their land or giving up the right of each to rule in a kingdom of his own.

During the past three months, it is said, thousands of tons of hay have been shipped from Ontario and Quebec to the United States. There would in all probability have been a hay famine in the Eastern part of the United States had it not been that Canada had a surplus. Grass and clover seed prices in the United States have also been very high during the past six months, and Canadian exports of these have been large. How much greater would the farmer's returns have been had reciprocity been in force and the duty removed from these products?

Mr. Raynor, of the Dominion Seed Branch reports poor prospects for the 1911 crop of clover seed. Of course, you never can tell very closely what the yield of clover seed will be until it is threshed. If the aftermath is heavy, and the heads fill well, the crop may yet be surprisingly good. At the same time, we think well of his suggestion to press into service every field likely to yield reasonably well. Clover seed is rather a profitable crop. We often wonder why more farmers do not grow it. Also, we wonder why the demand is not much larger even than it is. It would be, if the soil-improving value of clover were more fully recognized.

LONDON, ONTARIO, JULY 6, 1911

The Action of Manure.

One of the most striking impressions of a recent drive was the pronounced contrast in a field of winter wheat, the greater part of which had been given a light dressing of barnyard manure at the time of preparing the soil for sowing the crop in the fall of 1910. A small strip was left without any manure, and the wheat on this portion was not nearly so vigorous and healthy, and was not headed out the second week in June, whereas, on the manured portion the wheat was well headed out, and had a rank, growthy appear-This difference in growth and vigor was characteristic all through the season. The presence and absence of the manure would certainly seem to have caused this difference, and the question is in what ways did it bring about these conditions?

Many farmers and gardeners look upon manure as of value chiefly in so far as it adds plant food to the soil. True, the addition of plant food is one of the greatest values of manure, but there are several other conditions produced by the addition of manure which are of great importance to the growing plant. The extra plant food added when manure is applied is possibly the first consideration. Nourishment is required to produce the healthy, sappy, quick-growing plant, but the value of the manure does not end here.

Moisture is another great essential; water must be present, even for the germination of the seed. As the plant grows, more moisture is needed, and it is a recognized fact that an insufficient amount of it reaches the earth during the ordinary growing season; therefore, if any means of conserving moisture can be practiced, the chances of vigorous growth and heavy yield are much better. Plants get their mineral food only from the soluble salts of the soil, and water is required to bring these salts into solution. The addition of manure causes an increase in the amount of organic matter or humus in the soil; and humus, being so fine and porous, has the largest water-holding capacity of all the various constituents of soil. This being true, the addition of manure is of great value in increasing the amount of moisture held in the soil, and this moisture not only renders larger quantities of the soluble salts available, but also conveys the nutrients in solution to the plant leaves, whence the moisture is transpired.

Manure added to the soil also has a stimulating effect, the humus serving to render the mineral-food constituents of the soil more available.

In this age of scientific research it has been shown that the application of manure increases to a small extent the temperature of the soil. It is also known to increase largely the number of beneficial bacteria which help to render plant food available. An ounce of fertile soil contains many hundreds of thousands of these small forms of life which are of great importance in the soil laboratory. Manure increases the bacterial content of the soil, and these bacteria render plant food available. Manure also acts to some extent as a mulch, preventing evaporation of moisture, which is ordinarily very great. Other advantages to be gained by manuring might be mentioned, but enough has been stated to show that the addition of plant food in the manure, while a prominent consideration, is by no means the only benefit to be obtained.

The actions of manure are many and varied, and the good results obtained are due to a great variety of causes; it is important to remember

this when reckoning the value of farmyard manure. In fact, the actual value of this fertilizer can scarcely be reckoned, on account of the many actions which it has in the soil, but we are convinced that a careful record of ultimate experimental evidence would place a much higher value upon it than is commonly assigned. Do not waste a load of it.

Oranges and Lemons.

In this issue of "The Farmer's Advocate" begins an important series of articles by W. R. Dewar, B. S. A., of Wentworth Co., Ont., on the orange and lemon industry of California. After the Boer war, Mr. Dewar spent some time in South Africa assisting in the revival of agricultural industries there, and at various times he has contributed articles to "The Farmer's Advocate." A specialist in horticulture, with extended experience and opportunities for observation, Mr. Dewar had the exceptional advantage, in preparing these articles, of spending five months at work in a 4,000-acre orange plantation, one of the largest and best-conducted in the State. He utilized the opportunity not only to gain advanced cultural knowledge, but in relation to the commercial and economic aspects of the citrus fruit industry, probably the most highly specialized and perfectly organized rural industry on the continent, if not in the world. Though Canada's interest in oranges consists chiefly in buying and eating them, partly because she is not yet sufficiently served with her own superb native fruits, there are lessons to be learned and warnings to be heeded from Californian experience that make the subject valuable.

People read half-page advertisements in local newspapers of "Sunkist" and "Red Ball" oranges, or admire in the grocery windows of little Canadian towns, perfect pyramids of golden fruit, selling at the price of apples, or less than it is retailed for over California or Florida counties, and as they buy they may wonder why. The reason is organization in Los Angeles, and intelligence in the orange groves. The men behind that pyramid do not mind paying their manager \$8.000 a year, or spending in one season advertising oranges \$100,000. Grow something good, make its distribution a business, coax the people to eat it, is the plan of campaign.

Fruit-growing is being taken up more seriously in Canada, not with oranges and lemons, but with apples, peaches, pears, plums, grapes, and all the smaller fruits, so it is worth while to study a business that in three seasons realized some \$51,000,000 returns, with only \$391 in bad debts. This year's output is expected to aggregate 50,000 carloads, worth probably \$25,000,000.

A pioneer missionary, Father Junipero Serra, like many another, carried into Southern California with him the seed of fruits with the seed of the Gospel. The last fifty years of its development has not been all rosy romance, for Mr. Dewar will tell of boom, struggle and disaster, along with progress and achievement. Those who dream of the fortunes of the Golden West, do well to heed the sobering thought that perhaps only a third of the groves have shown a profit, a third have paid their way, while the other third have been run at a loss.

In their fight with railroads, and other corporations that threatened to swallow up all the profits of the industry, the growers have developed two of the most remarkable organizations in the world, in which the small men and the big

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