

white varieties are in the greatest demand for shipping and milling. Several inquiries have been sent to us for information where pure Crown peas can be obtained. If any of our subscribers or seedsmen have a supply, they would do well to inform us of the fact. The shortness of the straw of this variety gives them preference, particularly with those who have good, rich, well cultivated land and require peas rather than straw. But for those who have not their land in excellent tilth, or if long straw is wanted, the Golden Vine Creeper or Strawberry Vine peas are preferable. On poor land we know of none that will outyield the California pea; this is considered the best for cooking when dry—we do not mean for cooking as a green pea, or as a pea for canning. For this purpose the green-coated peas are generally preferred. In our next we will touch on corn and potatoes.

### The Toronto Exhibition.

The Directors of the Toronto Industrial Exhibition held their meeting on the 20th inst., for the election of officers and other business. It was stated that the Association was progressing favorably from a financial point of view. They have an energetic, working Board, who are leaving no stone unturned to make this institution a prosperous one. They are about to appoint a salaried manager and canvasser to look after the interests of the Association, to interview exhibitors, and make the exhibition popular and attractive. It is contemplated making a semi-centennial exhibition of it. A Government grant was stated to have been promised. The President insisted on some new special feature being brought out every year. It was considered that the city should pay them \$19,000, and the buildings be handed over to the city.

We wish the Industrial Exhibition every success. We approve of having a holiday and giving amusement. Their desire to hand the buildings over to the city is a good one, and the appointment of a special manager to interview exhibitors, and look after the interests of the association, is also a good idea. The only point we have contended against has been the attempt to obtain and centre in Toronto the Government money granted for agricultural advancement. It has been our impression that the great aim of this association has been to attract a great crowd of citizens and others for purposes that are not for the agricultural interest, and that the real, plain, practical farmers and their products are only of second or third rate consideration, when compared to other interests and other attractions; thus the attention of visitors is drawn from, rather than toward, the agricultural interests. This is why we have so long advocated keeping our agricultural exhibitions as closely to their own business as possible; and for this reason we have so strongly advocated the retention of our township, county and Provincial exhibitions. If our views are wrong, we should be willing to change them, if reasonable arguments can be brought forth.

Some contend that we should pander to the opinions of the masses—that the horse race, the lottery and other attractions, will draw more people together than exhibits of cattle and turnips, and that we should be guided by the great success of these outside attractions.

The active measures being taken by the energetic managers of the Industrial Exhibition should be a stimulus to the Provincial Board and other bodies, to show what energy is in them. Are they asleep? Cannot they emulate the Industrial Association and prove it by the reports of good work done by them when the next exhibitions are over?

### Government Agricultural Expenditures.

Since publishing our last issue the Government has granted a large sum of money for the encouragement of tree planting. This we consider a step in the right direction, and much good should result from the expenditure. The Government has also granted a large sum for the establishment of creameries. We are not realizing as good a price for our butter as we should; the quality is not what it ought to be, but we have been rapidly improving.

During the last few years numerous factories have been established. We should be pleased if the Government would show how more money can be made by the creamery system; balance sheets showing this would have more effect with farmers than continued expenditure and Government aid. We have not as much confidence in the beneficial results from this source as from tree-planting; still we shall endeavor to give you fair reports of the progress made in this direction.

### Sorghum Sugar and Syrup.

[Report of the Convention of the New York State Sugar Association at Geneva, N. Y., Feb. 7 and 8.]

A. G. Williams, president, after calling the convention to order, stated that the reports from New Jersey, Ohio and Illinois all refute the charge that the North can never make syrup or sugar. This year's labor has been so successful that we take great courage from it. The cane is a clean product, growing in the air and not clogged with dirt. In selling sugar or syrup, the farmer sells no portion of the soil, if he but returns the bagasse. The sugar and molasses made by the Champaign Company in Illinois were free from any objectionable taste heretofore peculiar to sorghum. The sugar is of a light yellow color and graded as yellow C. It sold at 8 and 8½ cents per pound. We give a short sketch of the remarks of some of the speakers, condensed from the columns of the Utica Herald:

Prof. Caldwell, of Cornell, stated that cane sugar is 2½ times sweeter than glucose. Cane sugar is produced through the agency of starch. Glucose is good enough for beer brewing and cheap candy, but not good enough for honest people to use for domestic purposes.

Dr. Peter Collier, of the Department of Agriculture at Washington, was next introduced as the father of the sorghum sugar industry. He stated that the sugar rapidly increases with the growth of the cane, but has not reached its maximum, when the seed has become hard. The chances of making sugar from sorghum are only about even when the seed is in the dough. Of the 100 varieties of sorghum grown and tested by him all contained about the same amount of available sugar and but very little less than the sugar cane of Louisiana. By allowing the seed to stay on the cane, the latter did not mature so early by about ten days as when the head was removed, although in sugar there was no difference. There is no gum in sorghum juice; it is simply a product of the manufacture. As for sorghum sugar being a paying crop, we have the experience of the largest company in the northern States, the Rio Grande of New Jersey, that the sugar crop did not cost a cent a pound as it stood, the seed paying the entire expense. It cost \$1.75 per 100 pounds to manufacture the sugar. A ton of cane can be made to produce 100 pounds of sugar. A crop of seed and of juice can both be secured in the same season. More in number of the human family live upon sorghum seed than upon corn and wheat put together. The Governor of Bengal states that 60,000,000 people in that part of India live upon sorghum seed, instead of upon rice, as is generally supposed. It is used as food in Turkestan and other parts of Asia. Recently some forty varieties have been received from South Africa totally unknown in America. Some of the broad-leaved varieties of sorghum received from Natal will prove very valuable for ensilage.

The only safe way to make sugar is to use the cane as soon as it is cut. The average of many chemical tests gave 20.85 per cent. of sugar from

the juice. In the world there is produced about \$30,000,000 worth of sugar, and by imperfect methods nearly \$150,000,000 worth is lost in the bagasse. To-day two-fifths of the world's sugar supply comes from the sugar beet, an industry that was inaugurated in France, Feb. 20, 1811. March 27, 1811, Napoleon established six schools for the purpose of developing that industry, when it cost eighty cents a pound to make the sugar. In 1881 the United States imported \$136,416,036 worth of sugar and syrup, including duties. Now we have a sorghum crop that will in time enable us to keep most of this money at home. The crops of the Rio Grande Company ranged from 3½ to seventeen tons of cane to the acre.

Pressing the stalks without stripping the leaves gives more syrup but less sugar, and makes more trouble in defecating. For the purposes of defecation lime is used as it would be for making white-wash. If cane is thoroughly ripe the effect of the frost is slight, but if not ripe it is unfavorable. The method used mainly for defecation was to prepare lime as described above, and then, by use of litmus paper, to add the lime at any temperature before boiling, until the paper was just turned purple. Then raise the heat, remove the scum, let the juice stand in the defecator, the syrup not being darkened by standing unless there is an excess of lime. Allow it to settle. Then draw off from a spigot in the bottom of the defecator about a quart, which is placed aside. Then draw the whole in a clear condition for the evaporator. If the cane is very ripe the sediment will not subside; but by pouring in cold water and reducing the specific gravity the sediment settles, the only other result being a large quantity of water to evaporate.

Suckers are not harmful in syrup making, but exceedingly damaging to the sugar product. Re-planting has a bad effect in sugar making, by reason of the unevenness in the ripening of the cane. In 1881 only 153 bushels of seed were obtained from ninety-three acres in the crop, by reason of late planting. Take care to avoid those varieties that send up suckers. White Librarian is a variety that can be grown in the North nearly as well as the Early Amber cane. In one set of experiments canes that stood for a month after they were cut, exposed to the weather, yet continued to retain their juice and show an increased amount of sugar, a fact, however, very curious and unusual.

As to the proper price for manufacturing syrup and sugar, the convention unanimously voted to charge two cents a pound for making syrup. The members estimate eleven pounds to the gallon.

### The Apiary.

"Do bees remove eggs from one cell to another?"

This question is answered in the *London Journal of Horticulture*, in this wise:

"Yes, certainly. This I have known and witnessed for fifty years. I have often seen eggs laid by queen bees before being removed from their hives, set in other cells after their removal, and have known such eggs become queens, thus proving that they were not the eggs of fertile workers. Queen excluders, then, so much talked about at present, can not be of much use? No, they are valueless; for if bees determine to breed in any part of a hive queen-excluders will not prevent them. Last September a correspondent of a journal wrote that one of his colonies lost its queen when the combs were filled with honey, brood and eggs. He removed the frame of honey and gave them a frame of empty comb in its place. The hive was examined four or five days after, when there were found several queen cells on the empty sheet of comb. As it contained no eggs when placed in the hive, he saw that the bees had taken them from one comb to another. Eight queen cells were erected and filled on the empty sheet. He adds: 'There can be no mistake about this, for I took the empty frame from my honey room where it had been laid six or seven weeks. If more evidence be wanted it may be found in the fact that in many instances—I might venture to say in all instances of breeding in supers—the bees first prepare in the cells for the reception of eggs; and experienced men on examining supers can tell where the egg will be deposited. Bees are the masters and determine these matters themselves without consulting queen or queen-excluders. It will be well for bee-keepers to remember these facts.'"