

THE SORGHO, A NEW SUGAR PLANT.

The scarcity of corn in France, as we learn from an English contemporary, has drawn attention to a new plant, recently introduced from China, which promises to surpcede to a certain extent, the use of beet-root in the manufacture of sugar and the distillation of alcohol. The agricultural committee of Toulon has recently addressed a report to the Minister of War, with respect to the use of the plant in question. It is called the *sorgho*, or *holcus saccharatus*, and was first introduced into France in 1851, by M. de Montigny, the French consul in China, who sent some grains of the seed to the government. Since then the culture of the plant has been commenced with success in Provence, and promises to be of great advantage to Algeria. The *sorgho* has been called the "sugar-cane of the North of China," and numerous experiments have recently been tried with a view to ascertaining if it possesses the properties necessary for producing a crystallizable syrup, so as to become a rival to sugar-cane and beet-root. According to the report of the Toulon Agricultural Association, it would appear to have those properties. The fact has been ascertained by a series of experiments made in the department of the Var. It also appears to be richer in the saccharine principle than any known plant, except the vine. Beet-root contains from eight to ten per cent of sugar; the *sorgho* produces from sixteen to twenty per cent, from which eight to ten per cent of pure alcohol, fit for all industrial and domestic purposes can be produced. The refuse is excellent food for cattle, who are very fond of it. The plant grows with great rapidity, and does not require irrigation. The *sorgho* is not a new discovery, as it has been used from time immemorial by the inhabitants of the North of China, by whom large quantities of sugar are extracted from it. But this is the first time it has been produced on anything like an extensive scale in Europe. —*Hunt's Merchants' Magazine*.

—:—

TO PRODUCE LARGE FRUIT.—A correspondent of the Gardener's Gazette says, that by a very simple and easy process, fruits of all kinds may be raised one-third larger than is usually the case, and of greatly improved quality. The secret consists in supporting the fruits so that they shall not be allowed to hang their whole weight upon the stalk, or to twist about in the wind. The Gazette states that when the fruit is allowed to hang naturally upon the stalk, the increasing weight strains the stem, or twig, and thus lessens the quantity of nutritious food flowing to the fruit. The fruit may be supported either by tying it to a branch with a piece of matting, or by enclosing it in a small net. Flowers, such as dahlias or peonies, may also be rendered larger by the adoption of this system.

SUGAR BEETS AS A FIELD CROP.—Mr. A. Y. Moore, President of the State Agricultural Society of Michigan, states that the kind of root which has produced the greatest quantity of milk with him, is the sugar beets.

Others have found the sugar beets of superior value, so much so, that one farmer within our knowledge has raised them as a field crop for a great many years. He says they yield as abundantly as any other root, and are, at the same time, more nutritive than any other, with the exception of carrots. He too, thinks they are superior, for milk cows, to any other root or vegetable whatever.

He informs us that butter made in winter from cows fed on this root, in addition to their dry feed of hay, is nearly, as great in quantity as in the fall, and of nearly, if not quite as rich a color and quality.

To secure a good crop of beets, especially of the white Silesian, the seed should be soaked, as otherwise they will germinate slowly, or not at all in very dry weather; the soil should be deeply ploughed and well pulverised; the rows three feet apart, to admit of easy cultivation between them.

—:—

THE HOUSE WREN.

A correspondent of the *Prairie Farmer*, in giving an interesting description of the habits of this bird, relates the following:—

Several years since, a pair of wrens nested in the portico of a neighboring house; and much interest being excited in them, from their confidence, they were closely observed. All went on happily till the female commenced sitting, when that arch enemy of wrens, a cat, pulled down the nest and killed her. The male commenced immediately rebuilding the nest, stopping occasionally to utter a mournful call for his lost mate. After about a week had elapsed, having finished the nest, all but the lining of feathers, he ceased his sorrowful note, and sitting on a tree close by, continued for several days to pour forth his loudest song, when, though he had not once left the neighborhood he was joined by a female. The new mate spent a day or two in examining the premises, and being apparently satisfied, she finished the nest by lining it with feathers, and as it was now protected by a wire grating, the pair raised their young in safety.

But last summer, I saw enacted a more curious scene, in bird life. In the same portico a pair of wrens had their nest, and in the wood-shed, at the back of the house, another couple had taken up their quarters. After those in the portico had finished their nest, and several eggs had been laid, the male was killed. After some days chirping anxiously, the disconsolate little widow went away, but in four or five days she returned, threw the eggs and lining out of the nest, and commenced twittering at a great rate; and shortly afterwards she was joined by a male bird, when she re-lined the nest, and again commenced laying. It was now discovered, to our surprise, that the widowed

wren's new husband was no other than the male of the pair whose nest was in the wood-shed; the female of which was at this time sitting. He did not, however, entirely desert his first mate; and when her young were hatched, helped to take care of them, till the other brood made its appearance, to which he then carried all the food he collected. Still, he would occasionally be seen to fly from one nest to the other, but the deserted female very properly paid no attention to him, and, now, never welcomed him with the usual loving twitter.

There are no other wrens in this country, with the same lively manner, and some of which have finer songs, or more beautiful plumage; but all lack the pre-eminently social qualities that render our homely little favorite so agreeable.

—:—

WAGON WHEELS.—It is evident that the larger the wheels of a vehicle are, so much lighter is the draft, until the centre of their circumference becomes equal in height to the horses' breast. Besides, large wheels produce less friction, because their velocity is less than small wheels, and the latter sink deeper in a soft road, thereby increasing the difficulty of transportation. The advantage of larger wheels than those in common use will farther appear when we take into consideration that the fulcrum is at the bottom. The average height of the fore-wheels is not commonly over forty inches, which would only give the horse a lever power of twenty inches over the weight; moreover the weight is at too great a distance below the horses' breasts. If we should increase the height of the wheel to sixty inches, it would give the team a lever power of thirty inches; still leaving the weight sufficiently low, making a difference in favor of the horses of fifty per cent.

We can see no good reason why the hind-wheels should be larger than those before. It seems to us that they should be equal, the opinion of some wagoners to the contrary notwithstanding. Suppose, for instance, the fore-wheels should be four, and the hind wheels six. The inclination forward of the line of traction would tend to press the load into the earth, and, consequently, increase the difficulty of drawing. If there be any advantage in having the wheels of different heights, why is it that the intelligent constructors of steam cars have not availed themselves of it? The advantage of larger wheels is somewhat lessened, it is true, by the increased difficulty of turning in a narrow compass, but wheels being of equal height does not increase this difficulty.

As the fulcrum of the wheel is at the bottom, it follows that its motion increases as the distance from the bottom increases, and if a horizontal line, (imaginary) be drawn, passing through the centre of motion, the velocity of that part above the line will be five times greater than the part below.

A wagon with two inch tire will sink in the ground four times deeper than a four