

of coals as fuel, and the return of the trash as manure to the soil, by which the quantity of canes for the ensuing crop would be increased at least 20 per cent., and in the greater number of Colonies very much more. He instances Barbados, where many estates, after a good supply of manure, readily yield, in favourable seasons, three tons of sugar per acre, which, without that assistance, would not yield one. He estimates the value of the megass employed as manure at 50 per cent. greater than when used as a material for fuel. We think, however, the Doctor is rather too low in his figure as to the cost of coals; we doubt much whether they could be landed at 20s. per ton in the West Indies. At the Royal Mail Steam Company's depot they average, we believe, 25s. to 27s. per ton. We are then instructed in the principles which ought to guide us in the desiccation of cane juice, and many improved methods are suggested. This is one of the most important parts of the subject under review.

Separate chapters are devoted to evaporation and filtration through animal charcoal, the concentration of syrup, the crystallisation, and the subsequent processes of potting or curing, claying, &c.

Our author points out as an indispensable requisite the removal of the treacle from the other coppers.

"The first improvement upon the present method, therefore, consists in placing the teaehs over a separate fire, and in giving it a slight modification of form. In the latter respect, it should be a circular vessel about 45 inches in diameter, and 14 or 15 inches in depth, the bottom of which should be slightly convex, that is, arched upwards; and it may be supplied with a cock for drawing off the syrup when duly concentrated."

Dr. Evans censures, and most justly, the vicious system at present pursued in the curing-house, and suggests many important improvements in potting, &c., especially the preservation of a more equable temperature—say 90°—and the exclusion of cold air and draughts.

A very favourable comparison is made between the products from sugar cultivation in Barbados and Demerara, strongly in favour of the former.

The following recapitulation of the rules and counsels laid down in the work should form the *vade mecum* of every planter:—

"1. The canes should be cultivated with a view not merely to their size and abundance, but we should, at the same time, by every means in our power, cause them to yield a juice as rich in saccharine matter and as free from all impurities as possible; and to prevent the evil which would result from decomposition of the juice when cut, the canes should be conveyed to the mill without loss of time.

"2. We should attempt to get from the canes the largest quantity of juice, either by improved mills, or by close attention to the fitting, bracing, feeding, &c., of those now in use, by sprinkling the megass with water, or by exposing it to steam, and by repassing it between the rollers.

"3. We must employ the best means in our power to defecate the cane-juice, that is, to make this liquid approximate as near as we can to a solution of sugar and water only. Its speedy exposure to the action of a high temperature must be effected, and the greatest caution must be practised in the administration of the '*temper-lime*.'

"4. The defecated liquor should be evaporated to the density of 32 deg. Beaumé, or to any other suitable degree, with the greatest expedition, care being taken at the same time, that the carbonisation of even the smallest particle of the sugar be prevented, by constantly preserving in the pan a depth of liquor sufficient to cover that part of it which is exposed to the fire.

"5. The object of filtering the liquor through animal charcoal is the more perfect removal from it of the albuminous principles, excess of lime, colouring matter, acidity, &c.

"6. That the concentration of the syrup to sugar proof should be effected with rapidity, and at the lowest temperature possible.

"7. That to promote an abundant and perfect crystallisation, repose, moderate warmth, and an equable temperature, are necessary; and to effect the better curing of the sugar, these two operations should be performed in the same vessel.

"8. That to induce the complete separation of the molasses, the sugar, when sufficiently cured, should be submitted to the process of liquoring.

"9. The molasses must be concentrated before any fermentative change shall have commenced."

The subject of the proposed central manufactories is taken up and discussed, and the Doctor's opinion is adverse to them. A company got up in England to promote this measure, would, he considers, neither ameliorate the condition