

Therefore 761 grains will consist of 209.50 carbon.
551.50 oxygen.

761.00

Consequently, 1,000 grains of lime will require 209·50 grains of carbon to convert them into carbonate of lime; and as we have seen that the abstraction of ·24 from 100 grains of sugar convert them into gum, it follows, that the abstraction of 209·50 grains would have a similar effect on 87,000 grains, or about 15 lbs. of sugar, which, being converted into gum, would prevent the crystallisation of several times its weight of sugar, and this is the cause of the formation of molasses. The loss of sugar is not the only bad consequence of the use of lime, as the greater the quantity of gum in the liquor, the more it must be boiled—the more it is boiled the darker it gets—and the higher the temperature at which the skip is struck, the smaller the grain. The following is a good proof that lime dissolves albumen, and becomes converted into chalk:—Take a spoonful of syrup out of the tache of any estate on which the liquor is tempered cold; it will be found filled with small flakes; these are albumen set free from its solution in the lime by the conversion of the latter into carbonate of lime, and coagulated by heat. It is perfectly possible to temper liquor, so that scarcely any uncrystallisable sugar will remain; but planters do not like this; they must have molasses for the still-house; they could, however, boil low, by which the grain and colour would be improved, and plenty of uncrystallised, although not uncrystallisable, syrup would be left to take the place of molasses.

We think we have now fully proved the following facts, viz. :—That the use of lime in sugar-making is not to neutralise an acid; that if acidity be present, the application of lime is injurious; that its action on gluten, albumen, wax, resin, and chlorophyll is equally so; that by decomposing the sugar and forming gum, the quantity of molasses or uncrystallisable sugar is much increased, whereby high boiling is rendered necessary, with its consequent heightening of colour and injury to the grain of the produce, and that therefore it is perfectly unfit for the purpose of tempering cane-juice. As regards its dirtiness, we beg to refer our readers to a highly-tempered curing-house and the bottom of their coffee cups; in the former, their olfactory nerves will be somewhat astonished, and in the latter they will find what chalk and coagulated albumen they have not already imbibed.

Having now shown the planters the difficulties under which they labour, we will conclude; but in case any of our friends should inquire what improvements we would suggest, we think it best to state, as Sir Robert Peel did at Tamworth, "they must call us in, in a regular way;" we, however, have not demonstrated all these evils without having a remedy at hand for them; but as that will form the subject of a future communication, we beg in the mean time to subscribe ourselves,

Your obedient Servant,

CALX CALORQUE.