# SUGAR HOUSE NOTES AND TABLES. A REFERENCE BOOK FOR PLANTERS, FACTORY MANAGERS, CHEMISTS, ENGINEERS, AND OTHERS EMPLOYED IN THE MANUFACTURE OF CANE SUGAR

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Sugar House Notes and Tables. A Reference Book for Planters, Factory Managers, Chemists, Engineers, and Others Employed in the Manufacture of Cane Sugar by Noël Deerr



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BY

**NOËL DEERR.**


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1900.

# PREFACE.

THE want, felt by the writer in his first experience of the cane sugar industry, of a book similar to the present one, is his only excuse for undertaking this compilation of notes and tables.

Although voluminous treatises on the manufacture of beet sugar have been written, the literature of the sugar cane is very scanty, and contains no work to compare with the numerous able treatises published by workers in the beet sugar industry. Of isolated information there are the various technical journals, such as "The Sugar Cane," and the publications of the Botanical Gardens and experimental stations established in nearly all sugar growing countries. In this respect the writer would like to pay a tribute of admiration to the excellent work that has been done by the skilled chemists and botanists at the various Java experimental stations.

In compiling this book, use has been made of nearly all the published works dealing with cane sugar (a list of which is given later); special mention should be made of "The Sugar Cane," the papers of Prinsen Geerligs, and the very useful handbooks of G. L. Spencer.

The writer would take this opportunity of expressing his admiration of the stubborn fight made by sugar cane planters in all parts of the world against a State-aided system of suppression, and to these men this little book is respectfully dedicated, in the hope that it may be of some assistance to those whom it is intended to serve.

Finally, no one is more aware than the writer of the many imperfections which must necessarily exist in a work of this sort; he will be always pleased to accept suggestions or corrections from planters, manufacturers, or others interested in the cane sugar industry.

NOËL DEERR.

Albion, Berbice, British Guiana,

*January*, 1900.

# Sugar House Notes and Tables.

## ALBUMEN. ALBUMENOIDS.

OMPLEX nitrogenous bodies occurring in all vegetable juices; they are partly precipitated by heat, acids, and alkalies redissolving with excess of either of the latter; heated with excess of alkalies they are decomposed, giving chiefly amido-fatty acids.

## ANTISEPTICS.

Any body preventing putrefaction or fermentation; those most commonly employed are Corrosive Sublimate one part in a thousand; Sulphur Dioxide; Calcium Bisulphite; Chloride of Lime; Boracic Acid and Soluble Borates; Alkaline Fluorides (see under *Distillery*); Fresh Milk of Lime; Carbolic Acid and its derivatives, known commercially as Aseptol, Solveol, Lysol, etc.; Salicylic Acid recommended in the proportions of one pound to five thousand gallons of cane juice left overnight; Antinonnen; the last is a complex derivative of Carbolic Acid patented and prepared by the Baeyer Farbenfabrik, which, independently, has recently been highly recommended; besides its antiseptic qualities it is largely used as a preventative of dry rot and the ravages of insects.

## ATOMIC WEIGHTS.

### PARTIAL LIST (F. W. CLARKE).

| NAME. | Atomic Weight. | | NAME. | Atomic Weight. | |
|---|---|---|---|---|---|
| | Hydrogen=1 | Oxygen=16. | | Hydrogen=1 | Oxygen=16. |
| Aluminium .. | 26·91 | 27·11 | Nitrogen .. | 13·93 | 14·04 |
| Barium .. .. | 136·39 | 137·43 | Oxygen .. .. | 15·88 | 16·00 |
| Calcium .. | 39·76 | 40·07 | Phosphorus .. | 30·79 | 31·02 |
| Carbon .. .. | 11·92 | 12·01 | Platinum .. | 193·41 | 194·89 |
| Chlorine .. | 35·18 | 35·45 | Potassium .. | 38·82 | 39·11 |
| Copper .. .. | 63·12 | 63·60 | Silicon .. .. | 28·18 | 28·40 |
| Fluorine .. | 18·91 | 19·06 | Silver .. .. | 107·11 | 107·92 |
| Hydrogen .. | 1·00 | 1·008 | Sodium .. .. | 22·88 | 23·05 |
| Iron .. .. | 55·60 | 56·02 | Strontium .. | 86·95 | 87·61 |
| Lead .. .. | 205·36 | 206·92 | Sulphur .. | 31·83 | 32·07 |
| Magnesium .. | 24·10 | 24·28 | Tin .. .. | 118·15 | 119·05 |
| Manganese .. | 54·57 | 54·99 | Zinc .. .. | 64·91 | 65·41 |

## AVAILABLE SUGAR.

The available sugar is the amount of sugar that can be extracted, expressed as a percentage on the sugar in the juice: the figure is entirely empirical, and depends not only on the purity but on the nature of the impurities, especially the glucose and ash, the quality of the lime, the skill in tempering and subsequent operations, particularly in the pan-boiling and the application or otherwise of crystallisation in motion. In no case should the recovery of first sugar fall below 70 per cent., and with pure juice and the best plant as much as 90 per cent. may be recovered in all sugars.

## BALLING.

See Brix.

## BEAUMÉ.

To convert Beaumé degrees to Density.

$$D = \frac{144{\cdot}3}{144{\cdot}3 - B} \; ; \quad B = \frac{144{\cdot}3\ (D-1)}{D}$$

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