

LOW GRADE BOILING

WITH SPECIAL REFERENCE TO GRAINING METHODS.

I. INTRODUCTION.

Investigation of Low Grade Products of the Raw Sugar Factory, has been mainly confined to crystallizer studies and methods of automatic boiling control. Sugar boiling has been investigated, but mostly in connection with the Beet and Refined Sugar Industries whose problems however, present a totally different aspect to those of the Raw Sugar Industry.

The Sugar Technology Department has already carried out work connected with crystallizer performances^{1.}, and has now decided that a series of investigations of Low Grade Boiling are to form a large part of its Research Programme. This dissertation can be regarded as the preliminary investigation.

The effect of granulation types on molasses exhaustion and centrifuging ability has been long recognised, but is a factor over which there is, at present, very little control.

Webre^{2.}, at the Sixth Congress of the International Society of Sugar Cane Technologists held at Louisiana in 1938, read a paper in which he suggested "seeding" "A" molasses with icing sugar, in conjunction with the 2-Boiling System. He emphasized that the success of the method would depend on rigid supersaturation control, and the use of mechanical circulation. The first part of this paper describes an investigation of his method, modified in that no mechanical circulation was available.

Although "seeding" a pan is not a new departure, it is not very widely used, the most common method of crystal formation being performed by spontaneous granulation, using the Waiting and Shock methods of graining, which however produce irregular sized grain. The second part of this paper was to contain a comparison of these two methods and also, any points of interest noted during

boiling were to be described. Unfortunately, owing to the curtailing of the current crop, and other unavoidable circumstances, a thorough comparison of the two methods has not been possible, but many points of interest noted during boiling have been investigated with a view to suggesting improvements in technique and recommending further lines for research.