The Changes Taking Place During the Ripening of Bananas

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Editor's Note :—
Mr. W. Lewes Evans, Resident Manager for this Company at Montreal, who, himself, ever so often, writes so interestingly for "Fruit Dispatch," was instrumental in obtaining from Professor Lloyd this highly instructive banana article.
Professor Lloyd has given much study and attention to his subject, and we are very appreciative of the benefits herewith extended our readers.

The process known as "ripening" in fruits is a complex of physiological phenomena, resulting, from the gustatory point of view, in a product of maximum palatability and digestibility. So complex indeed is the series of events that as yet only the more readily studied and the practically most important have received attention. As extensive as the gaps in our knowledge may be, however, enough is known about the banana to make it distinctly worth while to offer a brief summary of this knowledge as it stands at the present moment.

The changes in question may be grouped as follows: Those namely which take place in the appearance of the fruit, of prime importance in finding a market; those in texture, which are the paramount qualities concerned in handling, but which are at the same time scarcely of secondary importance in the eating; those of flavour, which must meet the supreme test of eating; and those of food value and digestibility, undeservedly less considered, but of real importance in the long run, since the fruit of highest food value, especially when coupled with tastiness, will hold the market when it fails for others of inferior values.

Colour Changes

The changes in the colour of the banana which ensue during the ripening process are taken as indices of the condition of the fruit. Assuming it to be in good condition when received by the wholesale merchant, it will have a bright green colour. The changes which ensue during the hanging period are similar in general to those which take place in foliage during the early autumn. In the tropics this discoloration takes place at various times, according to the species of tree. These changes are chemical in nature, and consist in the disintegration of the green pigment, known to science as chlorophyll, and its supplanting by a yellow pigment, the later destruction of which is followed by the browning process. None of these changes are of necessity dependent on each other, so far as we know. For example, the yellowing is held by some to depend merely upon the removal of the green, thus unmasking the former pigment, and this is undoubtedly in part true. In the banana, however, there appears to be a transition period between the loss of the green and the full epiphany of the yellow when the colour is quite pale, and neither one thing nor the other. It would thus seem that the yellow pigment in the banana is in large part a development rather than merely a passively produced effect.

The rate of colour change, like the other ripening processes, depends on the temperature. At 68 degrees Fahr.[1] bananas of a bright green col-

[1] Except where otherwise indicated, air temperatures (Fahrenheit) are given in accordance with practice. It would conduce to a more exact understanding of the behaviours of the fruit if the internal temperatures thereof were known.