CHAPTER 30
Future trends

Stephen T. Beckett

"According to the old adage, there is nothing new under the sun. There is, however, an infinity of possible variations on any one theme, and it is to the divergent conceptions of the chocolatier, confectioner, food chemist, packaging and mechanical experts that the industry owes its multitude of interesting product". So wrote C. Trevor Williams (1964) in his book on *Chocolate and Confectionery* over 50 years ago. This to a certain extent is still true today and will continue to be so. However, before trying to predict future developments, it is interesting to read how this past author thought the art of chocolate-making would develop and then to compare this with the current situation.

30.1 Past predictions

Three areas of development were reviewed by Trevor Williams (1964): new materials, package design and novel processing.

30.1.1 New materials

The hydrogenation of fats was once thought to open up new fields for the chocolatier with regard to texture and bloom resistance. This was surpassed by the widespread development of cocoa butter equivalents and substitutes, as partial or total replacers for cocoa butter in compounds and some chocolate markets (see Chapter 7). More recently (Mori, 1990; Talbot, 2009), the use of tempering, bloom retarding and lower calorie fats and the development of enzyme interesterification to produce some of the components of cocoa butter from new oil sources are just two of the many new ingredient types and processes with great potential for the future. New legislation (see Chapter 28) in many countries has limited their use in products labelled chocolate and it is only in markets like Japan that it is possible to see their true potential. Health concerns over *trans* fats

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has also led food scientists to develop alternative fats to replace the original hydrogenated ones, which will still give products with the correct texture and shelf-life (Talbot, 2006).

Some plastics and whey concentrates were regarded as possible alternative new ingredients. Although the former have yet to be developed the latter, as whey- or lactose-derived substances, are in fact incorporated in many chocolates, particularly in continental Europe. Their wide variety and importance has led to Chapter 5 in this edition being rewritten and updated.

The public's perception of the food value, or harmful effects of certain products, was considered a problem for the future of the industry. Over 50 years ago the need for the industry to educate the public was noted. How much more so is this true today! Natural "healthy" products such as soya, groundnut, sunflower seed oils, pectins and yeasts were considered as possible additions. The present health-food trend is certainly an important one, with many developments in the field of "functional foods", that is ones with positive health benefits. During past 30 years a large amount of work has been carried out which has shown the very positive health effects of eating cocoa (see Chapter 22). A major problem for the manufacturer is that an ingredient, which has a positive image one week, can be regarded as unhealthy the following week. Even more strangely an additive which is beneficial in one market would be difficult to sell in others, whilst some products with good nutritional properties are still regarded as being junk food by the media.

Also included in William's list was the possibility for alternative sugars. Dextron in particular was noted. Although this has not found a major application in the confectionery industry, the development of new sweeteners has been a major part of present research within the sugar/sweeteners industry (see Chapter 4) and the ideal low calorie sucrose replacer that is free from laxative effects is probably yet to be fully developed. There is also a current media campaign in some countries to reduce overall sugar intake, claiming that it is more unhealthy than fat.

30.1.2 Packaging

A possible future prediction was the use of an edible moisture-proof film, sprayed on confectionery to eliminate the necessity of wrapping media. This appears to be totally impractical, however, as packaging is designed to protect the product from dirt and physical damage. This necessitates the packaging material being removed to take dirt with it. It also often needs to be relatively bulky so as to withstand knocks.

The importance of the correct use of colour, packaging design and symbolic devices to denote different manufacturing houses are as important today as they were in the past. The development of new machines means that the range and quality of packaging has changed rapidly. The increase in the speed of these machines and the growth in importance of large super/hypermarket outlets have led to a rapid growth of packaged countline goods. Trevor Williams noted that in