



Book review

A. Nussinovitch, *Plant Gum Exudates of the World – Sources, Distribution, Properties, and Applications* CRC Press, Boca Raton, FL, USA, 2010. (xxv + 401 pp., \$179.95, ISBN: 1-4200-5223-7)

Natural gums exude from trees and shrubs after injury in tear-like, striated nodules or amorphous lumps, and then dry in the sun to form hard, glassy exudates in a variety of colours. Such exudates have been used for centuries in many different ways, for example their use as food is well documented in historical texts, their use in food applications, as emulsifiers, stabilisers, and thickeners, dates back many years, and their non-food related uses in pharmaceuticals, cosmetics, textiles, lithography, and minor forest products can also be traced back through history.

Over the last half a century many new gum exudates have been discussed in the scientific literature, either in passing or in more detail, and many volumes covering polysaccharides and hydrocolloids contain specific chapters devoted to the chemistry and industrial applications of the more commonly utilised exudates. However, there are many exudates that have not been described, scientifically investigated in any detail, or their traditional applications reviewed, although awareness and interest in potential application of these lesser-known natural raw materials has dramatically increased over the last few years. Investigations into the physicochemical characteristics of such exudates has resulted in proposals for their use as alternatives to, or in combination with, more traditionally commercially exploited gums such as gum arabic, karaya, tragacanth and ghatti.

This volume begins with two important introductory chapters, which provide an overview of the roles and sources of gum exudates, and deal with the physiological aspects of polysaccharide formation in plant exudates, respectively. These are followed by the two main chapters, which comprise over half of the volume, and are devoted to listing the major, and minor, exudates of the world, respectively. In these chapters each gum is supported (wherever possible) with the botanical names and

synonyms of the tree or shrub from which the gum is exuded, a list of common and vernacular names, information on geographic distribution, present common names for the gum, a description of exudate appearance and colour, information on water solubility, chemical characteristics and structural features, physical and physicochemical properties, and commercial availability. High quality colour photographs are provided throughout to present many of the gum exudates in their natural state as well as the relevant trees, leaves, flowers and other plant parts. Five additional comprehensive chapters are devoted exclusively to gum exudate identification, functionality, and applications, specifically covering food applications, water-based adhesives, medical, cosmetic, and biotechnological uses, analysis and identification, and miscellaneous uses, respectively. The volume concludes with an organism name index, and a general index.

This comprehensive volume is unique in that it provides a definitive classification of gum exudates. Most, if not all, books dealing with gum exudates classify them according to country or geographical location, or on the basis of their molecular structural composition. Here the gums are classified according to their botanical taxonomy, which is family, genus, and species. In conclusion, '*Plant Gum Exudates of the World*' is an essential reference volume for all individuals with academic and industrial interests in gum exudates, from their sources through to their ultimate application, and is therefore highly recommended.

Charles J. Knill

John F. Kennedy*

*Chembiotech Laboratories, Institute of Advanced
Science & Technology, 5, The Croft, Buntsford Drive,
Stoke Heath, Bromsgrove, Worcestershire, B60 4JE, UK*

* Corresponding reviewer.

Available online 30 October 2010