

Preface

This Trilogy of books answers the question “What is Horticulture?”. Their contents span from tropical plantations growing exotics crops such as cocoa, pineapples and rubber through to the interior landscaping of high-rise office tower blocks and other landscape applications which encourage physical and mental health. The common thread uniting this Discipline is the identification, breeding, manipulation of growth and stimulation of flowering and fruiting in plants either for food, environmental or social improvement. Understanding the scientific principles of why plant productivity increases following physical, chemical and biological stimuli has fascinated horticulturists for several millennia.

Epicurus (341BC-270BC) the Athenian philosopher of the 3rd century BC believed that plants achieved “the highest good was calmness of mind”. Calmness comes to some Horticulturists with the satisfaction of entering vast hectares of bountiful orchards, to others from well designed and carefully maintained landscape while others are entranced by participation in conserving components of the Earth’s fragile biodiversity. Horticulture, while being a scientific discipline, has much wider and deeper dimensions. There are historic, artistic and cultural facets which are shared with the Humanities and these aspects are included within this Trilogy. Wherever Horticulturists gather together they share a common language which interprets useful scientific knowledge and cultural understanding for the common benefit of mankind. For while Horticulture is about achieving an intensity of growth and development, flowering and fruiting, it is wholly conscious that this must be achieved sustainably such that the resources used are matched by those passed on for use by future generations.

The structure of this Trilogy is such that it traces the evolution in emphasis which has developed in Horticultural philosophy across the second half of the 20th and into the 21st century. Following the worldwide conflicts of the 1940s the key necessities were the achievement of food sufficiency and the eradication of hunger from the planet. In the increasingly affluent and developed world there is now food sufficiency *par excellence*. Never before has such an array of plenty been made available year round. This plenty is nowhere more evident than in the fresh fruit and vegetable aisles of our supermarkets. Horticulture has given retail shoppers the gift

of high quality and diversity of produce by manipulating plant growth, reproduction and postharvest care across the globe.

This first volume illustrates in considerable depth the science, management and technology which underpins the continuous production of Horticultural Produce. Firstly there is a consideration of aspects of industrial development based on basic scientific discoveries. This is followed by chapters written by acknowledged world experts covering the production of: Field Vegetables, Temperate Fruit, Tropical Fruit, Citrus, Plantation Crops, Berry Crops, Viticulture, Protected Crops, Flower Crops, Developing New Crops, Post-harvest Handling, Supply Chain Management, and the Environmental Impact of Production. Crop Production Horticulture may now be found supporting the economies of less developed nations, consequently the final Chapter focuses especially on the impact of Crop Production Horticulture in Africa.

Subsequent volumes in this Trilogy cover Environmental Horticulture (volume 2) and Social Horticulture (volume 3). Once food sufficiency was achieved in many developed countries, Horticulture from about the early 1980s onwards, became concerned with the manner by which it influences the human environment. Some might argue that this is a return to Horticulture's role in the 17th to early 20th Centuries, when plants were used very effectively to change local environments. Volume 2 assesses the activities and achievements of Environmental Horticulture in detail. It covers in considerable depth the scientific, management and technological concepts which underpin Environmental Horticulture. It covers considerations of: Horticulture and the Environment, Woody Ornamentals, Herbs and Pharmaceuticals, Urban Greening, Rural Trees, Urban Trees, Turfgrass Science, Interior and External Landscaping, Biodiversity, Climate Change and Organic Production. Volume 3, Social Horticulture, brings the evolution of the Discipline firmly into the 21st Century. It breaks new ground by detailed analysis of the value of Horticulture as a force for enhancing society in the form of social welfare, health and well-being, how this knowledge is transferred within and between generations, and the place of Horticulture in the Arts and Humanities. Volume 3 contains considerations of: Horticulture and Society, Diet and Health, Psychological Health, Wildlife, Horticulture and Public Welfare, Education, Extension, Economics, Exports and Biosecurity, Scholarship and Art, Scholarship and Literature, Scholarship and History and the relationship between Horticulture and Gardening.

The value of Horticulture for human development was emphasised by Jorge Sampaio (United Nations High Representative for the Alliance of Civilisations and previously the President of the Republic of Portugal) in his opening address to the 28th International Horticultural Congress held in Lisbon, 2010. He stated that Horticulture can achieve "a lot...to overcome hunger and ensure food security". In the face of estimates that the world's population, particularly in developing countries, will reach 9.1 billion by 2050 and in this Horticulture has an especially important role. Intensive plant production has much to offer as urbanization continues at an accelerating pace. Shortly about 70% of the world's population will choose to live in the urban and peri-urban areas of many countries. In contrast with the developed world many millions of the world's population continue to be undernourished and

in poor health. Horticulture can help massively to change this situation. Climatic change, over-population, soil degradation, water and energy shortages, pollution and crippling destruction of biodiversity are the challenges facing humanity. Horticulture in its Production, Environmental and Social roles offers important knowledge and expertise in these areas. This is well explained in “Harvesting the Sun” a digest recently published by the International Society for Horticultural Science. In summary form the international interactions between horticultural science, technology, business and management are displayed. This offers pointers as to how over the early part of the 21st Century world food production must rise by at least some 110% to meet the demands of expanding populations in countries such as China, India, parts of Asia and in South America.

Considerable breadth and depth of intellect are demanded of those who seek an understanding of horticulture. This is not a discipline for the faint-hearted since the true disciple needs a considerable base in the physical, chemical, and the biological sciences together with a knowledge of natural resources linked with an understanding of the application of economics and engineering and the social sciences. Added to this should also come an appreciation of the artistic, historical and cultural dimensions of the Discipline. The teaching of fully comprehensive horticultural science courses in higher educational institutions has regrettably diminished worldwide. It is to be hoped that this Trilogy may go some small way in providing an insight into the scale, scope and excitement of the Discipline and the intellectual rigour demanded of those who seek a properly proportioned understanding of horticulture and horticultural science.

Enormous thanks go to all those who have contributed to these three volumes. Their devotion, hard work and understanding of the Editors’ requests are greatly appreciated. Thanks are also due to our colleagues in Springer for all their continuing help, guidance and understanding. In particular we would like to thank Dr. Maryse Walsh, Commissioning Editor and Ir Melanie Van Overbeek, Senior Publishing Assistant.

Professor Geoffrey R. Dixon affectionately records his thanks to his mentor Professor Herbert Miles, then Head of the Horticulture Department of Wye College, University of London (now Imperial College, London) who challenged him to “define Horticulture”. Regrettably, it has taken half a century of enquiry to respond effectively.

Sherborne, Dorset, United Kingdom
Queensland, Australia
August 2013

G. R. Dixon
David E. Aldous

Horticulture: Plants for People and Places, Volume 1

Production Horticulture

Dixon, G.R.; Aldous, D.E. (Eds.)

2014, XXI, 599 p. 152 illus., 126 illus. in color.,

Hardcover

ISBN: 978-94-017-8577-8