Contents

1 Introduction ........................................... 1
   Plants are no Less Complex than Animals:
   They are Just Different .......................... 2
   Natural versus Human Selection ................ 4
   The First Gardens ................................. 5
   Plants versus Animals ............................. 7
   Plant Blindness ................................... 8
   Popular Science .................................. 10
   Complexity ....................................... 12

2 Basic Plant Organisation: How it Differs
   from that of Animals ............................. 17
   Plants are Nutritionally Self-sufficient ........ 19
   Nutritional Self-sufficiency Renders
   Movement Redundant and Determines
   Plant Design and Construction .................. 24
   The Concept of Death in the Plant Kingdom ... 32
   Plants as Modular Organisms with
   Increased Autonomy of their Parts ............ 42

3 Why Trees are Almost Immortal and Other
   Related Issues ................................. 45
   Annual Rings as Climatic Memory ............... 46
   Longevity Elixirs ................................ 52
   Plants as Environmental Engineers ............. 63
   Chemical History of the Atmosphere:
   Photosynthesis and Plants as the Main Players . 74
   Planetary Aspects of an Enzymic Reaction .... 85
   Size and Age are not Always Related .......... 94
   How Tall can a Tree Become? ................... 97
   Life Span and Species Immortality ............. 108
Alice in the Land of Plants
Biology of Plants and Their Importance for Planet Earth
Manetas, Y.
2012, XVIII, 374 p., Hardcover
ISBN: 978-3-642-28337-6