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Nota di contenuto	Flowering and its Manipulation; Contents; Contributors; Preface; Part I: Core development and genetics; 1. A developmental genetic model for the origin of the flower; 1.1 Introduction; 1.2 What is a flower?; 1.3 Phylogenetic and paleontological context; 1.4 Evolutionary novelties of the flower; 1.4.1 Bisexuality; 1.4.2 Determinate/compressed axes; 1.4.3 Perianth; 1.5 Ordering the key steps in floral evolution; 1.6 Developmental genetic background; 1.6.1 Position and identity of the reproductive organs; 1.6.2 Developmental regulation of the perianth; 1.7 Models for the origin of bisexuality 1.8 Apical megasporophyll production on a microsporangiate axis?1.9 The compression of the floral axis; 1.10 The evolution of the perianth; 1.11 The origin of a dimorphic perianth; 1.12 Conclusion; References; 2. Floral induction; 2.1 Introduction; 2.2 Floral transition is marked by developmental phase changes; 2.3 Floral induction is mediated through multiple pathways; 2.4 Photoperiodic floral induction provides a cue to

seasonal changes; 2.4.1 Photoreceptors transduce light signals; 2.4.2 The circadian clock is self-reinforcing; 2.4.3 Key genes integrate photoperiodic induction
2.4.4 CO and FT gene function is conserved in other plant species2.4.5 Photoperiod induction through CO-independent pathways; 2.5 Autonomous pathway; 2.5.1 FLOWERING LOCUS C integrates different floral inductive pathways; 2.6 Vernalization; 2.6.1 Mediation of vernalization in Arabidopsis by FLC repression; 2.6.2 Vernalization in cereals; 2.7 Hormones and other factors; 2.7.1 Nutrient diversion theory of floral induction; 2.7.2 Gibberellin; 2.7.3 Long-distance floral inductive signals; 2.7.4 Integration and commencement of the floral transition; 2.7.4.1 LEAFY and APETALA1
2.7.4.2 TERMINAL FLOWER 12.7.4.3 Conservation of LFY function in higher plants; 2.8 Perspective; References; 3. Floral patterning and control of floral organ formation; 3.1 Introduction; 3.2 The ABC model of floral organ identity; 3.2.1 The major genetic players in the ABC model; 3.2.2 Members of the MADS-box transcription factor family; 3.2.2.1 Redundant and complex functions amongthe floral MIKC MADS-box genes; 3.2.3 Members of the AP2/EREBP transcription factor family; 3.3 Regulating the expression of the floral organ identity genes; 3.4 Conservation and modification of the ABC program
3.4.1 Floral organ identity gene function in Petunia3.4.2 Floral organ identity gene function in Oryza; 3.5 Sex determination as a modification of floral organ identity; 3.6 Future perspectives; References; 4. The genetic control of flower size and shape; 4.1 Introduction; 4.2 Flower primordium outgrowth; 4.3 Regulating flower meristem size; 4.3.1 Cell-cell communication, pattern formation in the meristem andmeristem size; 4.3.2 Cellular factors regulating floral meristem development; 4.4 Early control of organogenesis in the flower; 4.5 Generating organ boundaries; 4.6 Floral organ size
4.7 Flower shape and symmetry

Sommario/riassunto

The flowering plants now dominate the terrestrial ecosystems of the planet, and there are good reasons for supposing that the flower itself has been a major contributing factor to the spread of the Angiosperms. The flowers of higher plants not only contain the organs of plant reproduction but are of fundamental importance in giving rise to fruits and seeds which constitute a major component of the human diet.This volume opens with a chapter describing a model for the evolution of the Angiosperm flower. Chapters 2 to 5 describe the core development of the flower and include floral induc