Contents

Preface ix
Contributors xi

Part 1
Introduction 1

1. Plants in medicine: the origins of pharmacognosy 3
2. The scope and practice of pharmacognosy 5
3. Plant nomenclature and taxonomy 8

Part 2
The plant and animal kingdoms as sources of drugs 11

4. Biological and geographical sources of drugs 13
5. A taxonomic approach to the study of medicinal plants and animal-derived drugs 15
6. Pharmacological activities of natural products 41
7. Synergy in relation to the pharmacological action of phytomedicinals 49
   E. M. Williamson

Part 3
Principles related to the commercial production, quality and standardization of natural products 55

8. Commerce in crude drugs 57
   R. Baker
9. Production of crude drugs 61
10. Plant growth regulators 67

11. Plant cell and tissue culture; biological conversions; clonal propagation 72
12. Phytochemical variation within a species 80
13. Deterioration of stored drugs 91
14. Quality control 95

Part 4
Some current trends 107

15. Plant products and High Throughput Screening 109
   M. J. O'Neill, J. A. Lewis
16. Biologically active compounds from marine organisms 115
   G. Blunden
17. Traditional plant medicines as a source of new drugs 125
   P. J. Houghton

Part 5
Phytochemistry 135

18. General methods associated with the phytochemical investigation of herbal products 137

Part 6
Pharmacopoeial and related drugs of biological origin 171

Introduction 173

20. Hydrocarbons and derivatives 174
21. Carbohydrates 191
22. Phenols and phenolic glycosides 214
23. Volatile oils and resins  253
24. Saponins, cardioactive drugs and other steroids  289
25. Miscellaneous isoprenoids  315
26. Cyanogenetic glycosides, glucosinolate compounds and miscellaneous glycosides  327
27. Alkaloids  333
28. Tumour inhibitors from plants  394  
   P. M. Dewick
29. Antiprotozoal natural products  407  
   C. W. Wright
30. An overview of drugs with antihepatotoxic and oral hypoglycaemic activities  414
31. Vitamins and hormones  421
32. Antibacterial and antiviral drugs  429
33. Colouring and flavouring agents  435
34. Miscellaneous products  440

Part 7  
Plants in complementary and traditional systems of medicine  445

35. Herbal medicine in Britain and Europe: regulation and practice  449  
   S. Y. Mills
36. Homoeopathic medicine and aromatherapy  460  
   M. A. Healy, M. Aslam
37. Aspects of Asian medicine and its practice in the West  467  
   M. Aslam
38. Chinese herbs in the West  482  
   S. Y. Mills
39. Plants in African traditional medicine—an overview  488  
   A. Sofowora

Part 8  
Nonmedicinal toxic plants and pesticides  497
40. Hallucinogenic, allergenic, teratogenic and other toxic plants  499
41. Pesticides of natural origin  509

Part 9  
Morphological and microscopical examination of drugs  513

Introduction  515
42. Plant description, morphology and anatomy  516
43. Cell differentiation and ergastic cell contents  526
44. Techniques in microscopy  538

Index  549