Preface

For over 70 years I have worked in the herbarium at Cambridge University on the British and European floras. I have collected about 30,000 numbers consisting of some 50,000 specimens from most parts of the British Isles and made many visits to Continental Europe. Particular attention has been given to most critical genera: *Betula*, *Cerastium*, *Chenopodium*, *Conyza*, *Crepis*, *Dactylorhiza*, *Euphrasia*, *Fumaria*, *Hieracium*, *Limonium*, *Pilosella*, *Prunus*, *Rhinanthus*, *Rumex*, *Salicornia*, *Salix*, *Scleranthus*, *Sorbus* and *Ulmus*; and in helping friends in various ways I have considered the taxonomy of *Alchemilla*, Batrachian *Ranunculi*, *Potamogeton*, *Rubus* and *Taraxacum*. I have also spent much time studying ecotypic and geographical variation, in particular a comparison of those variants which occur on the coasts in dunes, shingle and saltmarsh with those growing as arable weeds, and those in mountains. In these taxa I have carefully examined large numbers of plants in a population to see how they vary and compared populations (not just one individual in each). Rare and local plants have not been collected but notes of the living plant have been made in the field and many of them have been grown in Cambridge University Botanic Garden and we have examined them there. In the early years of the flora a large number of descriptions were made in the field as well as the herbarium.

It has long been my wish to publish this information in a critical flora of Great Britain and Ireland. In the 1970s a group of us tried to get a grant to carry this out, but we were unsuccessful. Clive Stace then started work on his *New Flora of the British Isles*, which was first published in 1991, with a second edition in 1997 and a third in 2010. In it he gives only abbreviated descriptions and omits most of the species in the large apomictic genera and many of the infraspecific variants. Numerous introduced species are included by Stace in a British and Irish flora for the first time, detailed descriptions and specimens of many of which are difficult to find. In the third edition he has partially moved the main classification over to DNA. If we were starting this flora now we would do the same.

I considered that it was possible for me to write a flora in five volumes which gave a full description of all the species in Stace's flora and to add all the apomicts and many of the infraspecific variants, but it was too large a task to attempt to include all the biological information envisaged by the group in the 1970s. It was necessary, however, to have the help of another author who lived in Cambridge, to deal with the large amount of work involved. My eye fell upon Gina Murrell, who had worked with me in the 1960s and 1970s when we were writing accounts for *Flora Europaea*, *Flora of Turkey* and *A Flora of the Maltese Islands*. The work of one had complemented the work of the other and we were able to criticise one another without antagonism. We started fieldwork on this flora on 13 May 1987 by describing *Ceratocapnos claviculata*, which was flowering on Dunwich Heath in Suffolk, in a snowstorm. The last entry to the last volume was made in December 2012 when I added *Rumex subalpinus*; thus the flora took 25 years to write.

The introduction in Volume 1 will set out the way in which our islands' flora arrived after the last Ice Age, provide a history of the Cambridge University Herbarium and Library, in which most of the work for this flora was carried out, and give examples of how the flora was divided up into species, subspecies, varieties and forms.

This volume contains 18 families, 148 genera, 1122 species, 65 subspecies, 221 varieties, 53 formae and 93 hybrids. Volume 5 contains 28 families, 233 genera, 769 species, 93 subspecies, 148 varieties, 22 formae and 182 hybrids. Volume 4 contains seven families, 146 genera, 1098 species, 130 subspecies, 162 varieties, 27 formae and 51 hybrids. Volume 3 contains 59 families, 299 genera, 996 species, 187 subspecies, 308 varieties, 102 formae and 235 hybrids.

This volume contains the family Rosaceae with the partially apomictic genera *Alchemilla*, *Cotoneaster*, *Potentilla*, *Rosa*, *Rubus* and *Sorbus*. It was the most difficult to write, with the large apomictic genera and *Rosa* the most difficult of all.

Peter Sell