

# Preface

It is usual for acknowledgements to appear in the ‘small print’ at the end but this approach hides the contribution made by others because as newspaper editors say most people only read the first few centimetres of an article. As always I have received invaluable assistance from Herbert Sukopp. I shall be eternally indebted to Peter Werner for suggesting most of the main authors. Without the contributors the book would never have been written; it is theirs, I simply acted as an enzyme or a form of RNA. The book would never have been completed without the enormous help, tolerance and support of my partner Liz Colville (to whom this book is dedicated) who has done her best to keep me relatively sane in the face of many adversities. Finally, my grateful thanks go to Springer for agreeing to publish the book and especially Janet Slobodien, somewhat belatedly (with due apologies) to Melissa Higgs and Zach Romano for their tolerance as time after time I suffered the embarrassment of having to report yet another delay.

The book is the last in an ad hoc series of three about the plants and animals of European cities. The ‘series’ started life in my mind in the late 1970s out of curiosity—knowledge for its own sake, ‘what do we know about the organisms in cities, the abiotic environment in which they live and their dynamics?’ At that time the answer was ‘very little’ and that remains largely unchanged. It took 35 years for the first book to appear and another 10 years for this ‘final’ volume to be published.

A fourth volume remains to be written, namely ‘The Protozoans, Bacteria (and related organisms) and Viruses’ in European Cities. These organisms make a larger contribution to urban biodiversity than all the plants and animals added together and are far more important in relation to human existence, both positively and negatively. It is regretted that some of these issues were not discussed at all in *Birds in European Cities* whilst the effects of pollen on human health is considered briefly in *Plants and Habitats of European Cities*. The brief accounts of the Fungi in the latter are mainly confined to the macro-fungi (the large members of the Ascomycetes (cup and flask fungi) and Basidiomycetes (mushrooms and toadstools). The ‘micro-fungi’ such as the moulds and yeasts are virtually ignored, especially those that cause symptoms that human beings call ‘diseases’ such as *Aspergillus* spp., *Arthroderma* spp. and *Candida* spp., which appear to be restricted to medical mycology. These organisms cannot be put in a vase, do not flit colourfully around the

garden, are not furry and do not have forward-looking eyes, but they are extremely important to people, other animals and plants—many are deadly while others are essential to the making of bread and beer. The same principle applies to bacteria—in terms of human values there are ‘good’ ones and ‘bad’ ones.

There is no doubt that sufficient information is available to write the fourth volume, although a different approach and format is needed. Sadly as with aspects of mycology and entomology, the subject falls between two stools of disinterest—on the one hand, medical practitioners and biomedical scientists who have little (if any) interest in the natural history of the urban environment and botanists, zoologists and ecologists who have little (if any) interest in people and what artists and writers call the ‘human condition’. The gap between them is huge.

Knowledge of and interest in urban natural history remains in its infancy and is at least 50 years behind studies of the species composition and associations of woodland, grassland, freshwater and other ecosystems in rural areas. A major inhibition to the understanding of urban ecosystems is that descriptive ecology is no longer fashionable; consequently very little is known about the structure of the urban ecosystem, let alone how it functions. What information there is, is disparate and ‘un-coordinated’ whilst research lacks direction and an overall objective. Politicians, the media and people at large consider urban ecology in terms of nature conservation and the ‘curious’ when the issues are infinitely more serious and go to the heart of the planning, design and management of cities, the use of natural resources and the creation of a high quality environment for the benefit of people as a whole.

The urban population is at serious risk in both geological and biological terms. There are disasters waiting to happen, it is simply a question of when because many cities have been built in inappropriate places such as on the banks of major rivers, low-lying coastal land, on the sides of volcanoes and in earthquake belts without regard to the dynamics of geological processes and the climate. Although it is probably fair to state that at the time the settlements originated such matters were either not understood or not appreciated. People did not learn from Pompeii and the Dutch have continued to drain land and build cities several feet below sea level. In some cases there is nothing that can be done while in others there is but the solutions depend upon a detailed knowledge of the structure and function of ecosystems involved.

Predicting the biological disasters that are waiting to happen is more intractable, mainly because of lack of detailed knowledge about the presence, distribution, relative abundance and dynamics of the populations of vertebrates and invertebrates and the ‘pathogens’, as well as the adverse effects of pollution of the air, water and soil. On the other hand, there are considerable psychological benefits derived from the proximity of vertebrates and invertebrates provided that people like them. In addition, fishing along the banks of rivers and lakes is a major recreational activity.

This is a highly unsatisfactory state of affairs because it is a sad fact that politicians do not anticipate environmental problems (*sensu lato*). As one of my client’s commented, ‘Politicians and their officials aim to catch the bus as it passes the door but they often miss it’. The political expediency is to react to disasters after the event when they tend to panic, overreact and fund short-term ‘emergency’ research

that would have helped prevent or reduce the impact of the disaster in the first place. On the other hand, physicists have managed to convince governments to spend huge sums pursuing the origins of the universe, which is of no consequence to anyone. The fact of the matter is that more is known about the universe and its origins than about the urban environment in which 70% (and growing) of the human population lives. No doubt physicists will disagree on the basis of the incidental benefits that emerge by chance, although I accept that pure research has its place. However, the cost of research to fully understand the structure and functioning of the urban ecosystem is likely to be infinitesimal compared with the cost of funding space exploration and, amongst others, the construction, maintenance and administration of the European Centre for Nuclear Research in Geneva—and the research needed to justify the investment.

Similarly, more is known about the marine ecosystem where no people live than that of the city where most of them live. Large sums of money are spent investigating global warming, more accurately climate change which has been a continuous process for millions of years and which we can do little, if anything, about; during the same period there has been relatively little funding of the urban ecosystem although we can do a lot to improve the quality of the lives of people and other organisms. Then there is the sacred cow of ‘biodiversity’ another scientific windmill that politicians have fallen for. The preparation of three volumes in this informal series and a general investigation for the fourth have demonstrated beyond all reasonable doubt that very little is known about the number and relative abundance of species that can be seen with the naked eye let alone those that occur below ground.

At the conference held in Curitiba in 2007 with the title ‘Cities and Biodiversity; Engaging Local Authorities in the Implementation of the Convention on Biological Diversity’, the Executive Secretary of the Convention stated ‘*The battle for life on earth will be won or lost in urban areas*’. That was 8 years ago; the quality of the urban environment in Europe was not on the political agenda then, it is still not and will not be until a major ‘event’ jolts politicians and biologists into action.

The contents of this book (and the previous two) will be of no direct assistance in winning the battle or preventing the inevitable disasters BUT they pave the way for fundamental and much-needed improvements in the understanding of the structure and function of the urban ecosystem and changes in the approach to planning, design and management of cities, which should be more firmly based in the biological sciences and the wise use of natural resources.

The book has been prepared and written for a wide audience comprising seven groups of potential readers. Some of my detractors will consider the audience to be too wide but the quality of the environment of cities is or should be a major concern to most of the world’s population because they live in them or may soon do so. The groups are (in no particular order):

1. Natural scientists in universities and research institutions.
2. Zoologists, ecologists and other biologists in private practice.
3. Teachers, researchers and practitioners in other disciplines including architects, planners, engineers, landscape architects, anthropologists and the medical professionals.

4. Post-graduates, undergraduates and other students in a wide range of disciplines who wish to know more about the life in cities.
5. People who are simply curious about and wish to know about the natural history of cities.
6. Politicians and administrators in central and local government and other public bodies concerned with the planning, design and management of cities.
7. Not least, the book is aimed at every man who should know more about the environment in which he or she lives.

John G. Kelcey

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