

Book Review

Urban Lichens: A Field Guide for Northeastern North America

By Jessica L. Allen and James C. Lendemer. 2021. Yale University Press, New Haven and London. Pp 158, 121 colour photographs and illustrations. 20.3 x 12.7 cm. ISBN 9780300252996. Flexibound. Widely available, including from www.nhbs.com (£24.99 + postage) and www.amazon.com (\$19.87 + postage).

Like the Curate's egg, this book is good in parts and is an important contribution to the lichen literature. As mentioned in the text, about half the human population currently lives in cities and the proportion will increase to about three quarters within the next thirty years. Hence, there are a great number of stone surfaces and trees available for lichen colonization, especially as levels of pollution are further reduced. Naturalists living in and around cities therefore need a book to identify and tell them about urban lichens, and this one focuses on lichens likely to be found in cities of Northeastern North America. This book is pocket sized so can be easily carried and is not too heavy, but the disadvantage is that the photographs end up being rather small, and this makes some features rather difficult to distinguish, for example those on pp. 4, 19 and 23.

The book begins with an introductory section about lichens, their life style, reproduction and response to pollution. The section on reproduction is illustrated by a diagram on p.7, part of which is labelled 'diaspores' (which are not explained in the text), while the text mentions 'trichogynes' which are not included in the illustration. There is also information that touches on lichen dyes and animal associates to stimulate the reader's interest. However, if it does stimulate, there are no directions or citations in the text to indicate where more detail on these subjects might be found. There is an alphabetical list of references on pp. 149-151 but I think it might have been more helpful to have them listed under key headings.

A section on methods is entitled 'Hunting lichens in cities' and includes lichen look-alikes (from paint to other non-lichenized fungi) and cautions against collecting lichens 'please do not collect lichens unless you are conducting a scientific study'. Perhaps, a little more leeway is warranted, or an indication that collecting a tiny portion of a thallus is permissible if it is to be followed by home study and use of the keys that are provided on pp. 108 to 131. Some lichen hot spots are mentioned for New York City and may prove to be an alternative venue to the American Museum of Natural History, for visiting naturalists and their families!

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The introductory parts of the book are followed by 'The Species', pp. 27-108, which includes descriptions and illustrations of sixty-one lichen species found in urban areas of Northeastern America. Subsections cover crustose, foliose and fruticose species; about half being crustose. Of the half dozen shrubby lichens selected, with the exception of an *Usnea*, all are species of *Cladonia*. Each species is given an English name and its Latin name. For citizen science purposes, it is a requirement to have a common name for everything even though the names have to be made up. Often, they are more difficult to remember than the Latin name. For example, names like the Sun-speckled Buttoned Rosette, Orange-cored Shadow and Lipstick Powder Horn which are used in this book are the sort of long descriptors that led Linnaeus to introduce his binomial system. Can you guess the likely Latin names for these examples? The answers are *Pyxine subcinerea*, *Phaeophyscia rubropulcra*, and *Cladonia macilenta*. Following the names, there is a detailed description of each lichen, where to find it, its abundance and notes, along with one or more photos. A credit card-sized New York Metro card is used in many of the photos as a scale and American coins for the smaller species. Identification of urban lichens may often be based on the photos (appearance, the colour and the morphology) and observations of any reproductive structures with a hand lens. The small size of the photographs certainly makes this somewhat difficult but keys help to compensate for this. To assist with using the keys, there is an illustrated glossary that includes photos of ascospores and conidia that will be helpful when a specimen collected (but against the advice on p. 20!) is examined with a microscope (beyond the capability of many users of this book). In addition, some of the features illustrated, for example pruina and schizidia, are difficult to make out in the photos.

Near the end of the book is a list of just over 100 lichen species that have been found in New York City. A few years ago, I participated in a study to document the lichens of the Public Gardens in the centre of the city of Halifax in Nova Scotia, Canada and I wondered how many of the lichens listed for New York were in these gardens. The answer¹ was some 20 species and ten of these were among the typical urban lichens which were included in the illustrated species section of this new book. Some, like *Cladonia chlorophaea* agg., *Parmelia sulcata*, and *Lepraria* spp.,

are well known to city-dwelling naturalists in the UK and western Europe. Others like *Physcia milligrana* and *Chrysothrix caesia* will be of interest because they are unfamiliar; but common and readily identified by those looking at lichens in urban North America. The co-occurrence of species in New York and Halifax is good indication that this book will have wide application for cities of Northeastern North America. As might be expected, the small city of Halifax has a greater range of foliose and fruticose lichens. Time will tell how many of the sixty-one species illustrated in this new book can be identified with reasonable confidence. I am sure that naturalist readers will soon be asking 'where should an interested person go next?' It might have been useful to have a section dealing with this aspect. At the moment there is, on p. 152, the heading 'Further Resources' and a list of four books. This half empty page could have been used to provide more advice.

Coupled with this, perhaps the list of New York lichens could have included spot tests and spore septation results to intrigue those keen to delve further into lichen identification. In conclusion, apart from the few reservations and suggestions, this book is a really great step forward. It will greatly encourage naturalists to study our interesting urban lichens and document changes in the lichen flora as air quality improves over the next decade.

Reference

- ¹ **Tumur A and Richardson DHS** (2017) The lichen-forming fungi in the Halifax Public Gardens, Nova Scotia. *Proceedings of the Nova Scotian Institute of Science* **49**, 35-48.

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