It is also a habitat of profound importance in ecological and evolutionary history, as for millions of years decomposing wood has provided a large part of the carbon and other nutrients available for heterotrophic consumption in the world's forests. This situation has changed dramatically in recent times, as intensive land use, be it agriculture or forestry, has to some extent diverted natural resources from wildlife towards human activity, raising the question whether decaying wood-associated animal, fungal or plant species may be in need of conservation. The processes of wood decomposition have also gained considerable interest in recent times in the context of wood as a sustainable source of lignocellulosic biomass for fuel production.

The book Biodiversity in Dead Wood is co-written by three authors: Jogeir N. Stokland of the Norwegian Forest and Landscape Institute and the University of Oslo, Juha Siitonen of the Finnish Forest Research Institute, and Bengt Gunnar Jonsson of Mid Sweden University. It is published by Cambridge University Press as part of their Ecology, Biodiversity and Conservation series and presents a deftly-written insight into the field of decaying wood-associated biota, emphasizing particularly on the saproxylic (wood-degrading) communities and the effects of wood decomposition on natural forest dynamics and sustainable forest management. Not surprisingly, given the authors' origin, the book focuses on the topics and species of wood and wood-dwelling organisms relevant to Northern Europe. Particularly well-covered topics include the evolutionary ecology of several groups of saproxylic organisms, the role of dead wood in forest sustainability and management, and a nicely written and informative chapter on threatened saproxylic species.

Inevitably, though, in a book on a complex topic authored by only three people, there are holes in the coverage that one would have liked to see filled. For example, the small section on bacterial wood degradation (chapter 2.4) would have benefited from expansion by a bacteriologist. The taxonomic information conveyed in the section is very scarce indeed, with only the phylum Actinobacteria being named (and mistakenly assumed to be synonymous with the actinomycetes, a term usually reserved exclusively for members of the order Actinomycetales). Curiously little is made of the intriguing topic of bacterial wood

degradation. Bacteria are known to contribute to wood decomposition in situ, the most significant being the eroding bacteria, the tunneling bacteria and the cavitation bacteria. Curiously, the last group is not mentioned in the book and the other two get only a cursory mention. No attempt is made to tackle the taxonomy of these groups of bacteria, which admittedly is still quite murky, in part due to their poor culturability. However, advances have been made recently that would surely have been worthy of some small attention. Bacteria are also important players in wood degradation through their actions in the guts of wood-boring animals. The gut microbiota of wood-boring insects such as termites and various beetle species has received considerable attention in recent years, with several partial and full metagenomic studies published. While the book mentions (p. 26) gut microbiotas as contributors of digestive enzymes, no attempt is made to present the diversity, taxonomic or functional, of the bacteria involved.

Another group of organisms that the layman might, at first glance at least, feel deserving of more attention in a book like this are the epixylic lichens and bryophytes. As any casual woodland stroller may observe, they are quite prominent on rotting wood although, upon reflection, it seems unlikely that these primarily autotrophic organisms contribute significantly to wood degradation, as is indeed explained in the book (section 4.3). Nevertheless, these organisms form a highly visible and distinctive part of the dead wood biota and their colonization, succession and ecology are interesting in their own right and seem deserving of a more comprehensive treatment in a work concerned with the biodiversity of dead wood.

Given the emphasis that the authors place on wood degradation, the book is surprisingly scant on the chemical and biochemical details of wood degradation. The structure of cellulose, hemicellulose and lignin is only very briefly introduced and degradatory enzymes only mentioned in passing. A detailed description of major degradatory pathways would have been entirely apt for a book of this kind and the roles, production and biotechnological potential of specific fungal and bacterial enzymes, such as lignin peroxidase, Mn peroxidase and laccase, would certainly have been expected.

The book is richly illustrated, containing dozens of photographs, plots and diagrams. Some of the images are very informative and appear to be derived from careful analysis of solid data, whereas others seem sketchily drawn and are of limited utility. Figure 6.3 (p. 123) is a case in point: ostensibly it illustrates the concept of increasing community homogeneity as wood degradation progresses, but it is unclear what data, if any, underpin the illustration, nor indeed does it do much to clarify the concept already explained quite lucidly in the chapter text. The photos are mostly appropriate and add value to the book, although one would have wished that some of them were printed in full color.

Overall, the book is well written. The language is relatively light on jargon, the tone often conversational and comfortable. The authors therefore succeed admirably in their aim of writing a book on dead wood ecology that is “accessible to readers without expertise in any particular discipline.” As outlined above, however, its utility to experts suffers as a consequence, at least in some of the fields it covers. Nevertheless, the book is a worthwhile investment for anyone interested in dead wood ecology. Although slanting fairly heavily towards forestry applications, as opposed to ecology and conservation biology in general, it does cover the field from several angles and does so in a lucid, sensible way. The book is heartily recommended to anyone interested in life in decaying wood.