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Plant Resins---Chemistry, Evolution Ecology and Ethnobotany

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Plant Resins—Chemistry, Evolution Ecology and Ethnobotany. 2003. Jean H. Langenheim. Timber Press, 133 Second Avenue, Suite 450, Portland, OR 97204-3527. 612 p; 47 color and 30 b/w photos, 70 line drawings, 4 maps, 4 tables. $49.95 hardcover. ISBN 0-88192-574-8.

Plant resins are often something ornamental horticulturists either ignore or endure—particularly when they clog up pruners. This book gives a different view—a rhyme and reason as to why plants produce resins and how generations of people have used resins for economic or personal benefit. When reading this book, I was struck with the pervasiveness of resins in terms of representation across plant communities and civilizations.

The book is divided into three parts. Part I, chapters 1 through 3, cover resin production by plants. This section starts out by defining and identifying the different types of resins based on chemical similarities and synthesis. The author thoroughly compares resins with other substances often confused with resins, i.e., latex, mucilage, gums, and differentiates them via chemical characteristics and anatomical location. This section continues by identifying all resin producing plants from monocots through woody angiosperms and gymnosperms. This listing of plants is the most exhaustive I have seen and the plants discussed are often specific to species not just genera. Appendix 1 and 2 reinforce this chapter by providing a complete list of all resin producing plants organized by family and genera, species and geographical distribution. This section concludes by reviewing the ultrastructure associated with resin secretion and storage. The light and scanning electron micrographs accompanying this chapter are very well done given the inherent problems with fixation and sectioning.

Part 2, chapters 4 and 5, discusses fossilized resin, i.e., amber or resinite. Chapter 4 details how resin is fossilized, its chemical structure, where it is found, and it's role in preserving DNA. Chapter 5 details the ecology of resins in relation to plant–pest interaction and the use by plants of resin as a defense system in both temperate and tropical ecosystems. Here again micrographs, black and white photos and line drawings effectively enhance this section. Suggestions for future ecological research on resins conclude the chapter.

Part 3, The Ethnobotany of Resins, is comprised of chapters 7 through 11. The first two pages are a geologic time line starting at 3500 BC and progressing to 2000 AD Along the time line, different uses and users of resins are identified. This sets the stage for a sequential discussion of resin use through history. I found this section very interesting, particularly since many us from the late 1970s generation thought we found something new when we experimented with things like *Cannabis* and other plants containing resins. Here again, line drawings and color plates of people as well as plants enhance this section.

The final chapter, 11, discusses the question of whether resins are useful for the future and outlines a number of suggested uses. The chapter concludes with an upbeat future for resin research and use, given the availability of new, improved technology.

Overall, this book is very well written, logically organized and thoroughly researched with over 67 pages of references. It is the most complete reference available on all aspects of plant resins. It is very affordable and should be part of every university and horticultural library.

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