

provides wine made from local grapes in precisely the same area where the wine industry first started in California. The proprietors explain, “Our dream is to bring a culture of winemaking back to Los Angeles.”

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MONTY WALDIN: *Biodynamic Wine*. Infinite Ideas, Oxford, United Kingdom, 2016, 222 pp., ISBN: 978-1-908984-81-4 (paperback), \$31.88.

Biodynamics is an approach to agriculture that utilizes specific soil preparations, and coordinates crop production with celestial cycles, intending to combine the spiritual with the material and create a complete farm ecosystem, which includes the farmer and a relationship to the cosmos. The increased popularity of and focus on sustainability in many areas of production has driven a corresponding increase in organic and biodynamic production, particularly in wine. The author of this book, Monty Waldin, is a prominent media presence in the United Kingdom and Europe. As well as being a wine writer, critic, and consultant, having worked in various vineyard capacities for a number of years, he is also an authority on organic and biodynamic wine production. Waldin sees biodynamics as a sustainable approach to wine making, as well as a spiritual practice that ostensibly results in the added benefit of increased quality and expression of terroir.

In the Introduction, Waldin outlines the differences in approaches to grape growing, from traditional subsistence farming to industrial agriculture, organic and ecological. This is where the sustainability of each approach is discussed, and Waldin lays the framework for his argument that biodynamics is the most sustainable alternative. Waldin’s purpose is not just to describe the biodynamic process, which he does very well; it is also to draw attention to and increase support for what he believes to be the most sustainable form of wine production.

In Chapter 1, Waldin presents the origins of biodynamics, as based on the philosophical work of Rudolf Steiner. Steiner gave a series of lectures in 1924, shortly before his death, entitled “Spiritual Foundations for the Renewal of Agriculture.” Often called simply “The Agriculture Course,” between June 7 and 16, 1924, Steiner gave eight lectures and four discussion sessions in which he outlined an approach to agriculture based on “Anthroposophy,” the spiritual science. This perspective offers a “...view of life that includes both spirit and matter” (p. 4). Waldin weaves Steiner’s philosophy into his descriptions of how biodynamics works, using quotes and references from the 1924 Agriculture Course and Steiner’s own handwritten lecture notes. Throughout the book, Waldin integrates

the work of many biodynamic practitioners, always relating it back to Steiner, while interspersing it with his own perspective.

Chapters 2–6 contain detailed descriptions of the biodynamic preparations, how to make and use them, and some advancements and popular alternatives. Chapter 7 describes aligning agriculture with celestial cycles, and Chapter 8 discusses biodynamic certification around the world.

The main focus of the book starts with Chapter 2, which describes the nine biodynamic preparations, forming the lengthiest chapter in the book. In this chapter, Waldin works through biodynamic preparations 500–508: three field sprays and six compost preparations. He covers these in their lot number order, starting with the most commonly recognized preparation, Horn Manure 500. The other preparations are Horn Silica 501, Yarrow 502, Chamomile 503, Stinging Nettle 504, Oak Bark 505, Dandelion 506, Valerian 507, and Common Horsetail 508. Horn Manure 500, Horn Silica 501, and Common Horsetail 508 are sprays that require “dynamizing,” or stirring. The other preparations are composts and can be added to the general vineyard compost.

Throughout the chapter, Waldin methodically elaborates each of the preparations in the same fashion, discussing the biodynamic perspective on its make-up and structure, how it is made, and how it is used. The descriptions are thorough and lengthy, approaching a full-on biodynamic manual. This is not a list of criteria for biodynamic certification, however, but would serve as a strong reference for such. Waldin’s descriptions do not read like a reference book. His integration of biodynamic processes, Steiner’s philosophy, practical considerations, and inter-relationships in a rich description, offers a complete tour through the preparations and their relationship to the vineyard ecology, without being, or reading like, a manual.

It is in this chapter that the purely physical aspects of the preparations (the elements they contain, their chemical makeup) are tied to their philosophical and spiritual function. This is the most contentious aspect of biodynamics, subject to the most debate and skepticism. The chapter ends with a concise but informative summary done in one page, and a tabulation of the six compost preparations.

In Chapters 3 and 4, Waldin elaborates on Chapter 2, and discusses composting and “dynamizing” in more detail. In Chapter 2, the composting of vineyard material is discussed in general, and Waldin explains how the biodynamic composts 502–507 are to be added to it. In this chapter, he also starts to compare different biodynamic approaches and comments on the work of Maria Thun and Alex Podolinsky, suggesting that the modifications made by these practitioners to create sprays are insufficient substitutes for solid composts. After having touched on the compost’s general role in sustainable farming, Waldin moves into more specifics about composting, starting with site selection, and managing the piles.

Chapter 4 explains “dynamizing,” which is essentially stirring, and how it is done in the preparation of the liquid spray preparations. The process is more than simple

mixing, as Waldin describes the purpose of the vortex created by stirring the mixture in relation to spiritual forces essentially being combined with the preparation.

Chapters 5 and 6 cover other biodynamic sprays and techniques, and other alternative treatments. Here Waldin touches on some of the different perspectives and practices advanced by various proponents of biodynamics. In Chapter 7, he explains how the use of the preparations and alternatives can be used according to the “celestial” calendar. This is an important part of biodynamics, based on the foundations of Steiner, but elaborated, expanded, and advanced by the work of Maria Thun.

The final chapter is devoted to biodynamic certification and provides information on various organizations around the world that provide certification of biodynamic viticulture, winemaking, or both, and the relationship to organic certification. Waldin’s insight is valuable here as well, as he offers more on the history of biodynamic practitioners and producers, and their effect on the certification. France, for example, has two biodynamic certification bodies as a result of a historic split between biodynamic wine producers and producers of other crops.

Waldin’s book provides an integrated history of biodynamics as well as a guide to its practices. He shows the connections between Steiner’s philosophy and the practitioners that have used, developed, and attempted to improve biodynamic practices. One of the interesting contentions to come out of this examination is that wine is actually anathema to biodynamics. Alcohol impedes the spiritual connection between humans and the cosmos, and Steiner eschewed its consumption. Other pertinent analyses appear as Waldin also calls out some biodynamic alternatives, offering a fair description while commenting on their limitations and disadvantages. For example, in Chapter 5, his summary of cosmic pipes and field broadcasters ends with the comment that “...if biodynamics was as easy as sticking a prep-filled pipe in the ground, then perhaps everyone would be doing it” (p. 123).

His passion for both wine and biodynamics is palpable, supporting both in spiritual pursuit of the enjoyment of life. At first, his underlying mission of support for sustainability is also prominent. The sustainability message does seem to fade into the background in favor of describing the practices, and it is not entirely apparent by the end of the book.

The book requires either a read through, and then a reread once familiar with how the chapters are connected, or jumping around to different parts of the book as need be to fill in gaps for understanding. As an example, the preparations described in Chapter 2 make both general and specific references to the material in the subsequent chapters, while referring back to Chapter 1 as well. Anyone not entirely sure how the composts are used, or what “dynamizing” is, has to wait until Chapters 3 and 4, respectively, to find out. With a subject as dense as biodynamics, this can be forgiven, and Waldin does provide direction throughout to help the reader navigate to the related parts of the book.

Despite the depth of the topic, the book is appropriate for the uninitiated as well as the expert. Waldin's descriptions are in sufficient detail in layperson's terms, while still offering direction, advice, and perspective for the experienced practitioner. It is an enjoyable read for both supporters and skeptics of biodynamic wine, and for any wine enthusiast desiring to know about a trend that is showing prominence in the world of wine.

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ROB DeSALLE and IAN TATTERSALL: *A Natural History of Beer*. Yale University Press, New Haven, CT, 2019, 256 pp., ISBN: 978-0300233674 (hardcover), \$28.

It is now possible to fill an entire bookshelf with excellent volumes covering the various topics related to beer and brewing. If one considers well-written and accessible books about all forms of alcoholic beverages, then it would be possible to fill an entire home library. *A Natural History of Beer*, by Rob DeSalle and Ian Tattersall, strikes a fascinating balance as a book about everyone's favorite frothy beverage. On the one hand, it digs deeply into many of the scientific, cultural, and economic aspects of beer, including chemistry, physiology, and even psychology. For such a relatively slim volume (256 pages), the research that went into writing it, as reflected by the breadth and depth of the bibliography, is stunning. On the other hand, this book is arguably the perfect starting point for anyone interested in learning and reading more about beer in order to become a more informed drinker, brewer, or shopper.

After finishing the introduction and opening chapter, the book can be read in any order. Each chapter is a fairly self-contained treatise on a different topic, and the topics vary widely from one another. As would be true of any reader, I found myself drawn to some topics more than others.

But each chapter, regardless of my interest in the subject beforehand, opened my eyes to facets of beer that I had never considered and knew little to nothing about. For example, as a Californian living in perpetual fear of the next drought, I was drawn to the chapter on water. There I learned about the concept of specific gravity, which I had heard of but thought it to be related to space travel, and how it is used to assess the alcohol content of beers. As another example, I was excited to read the chapter on hops, because increasingly I find that the pourers at my favorite bars and breweries tell me all about the hops in the beers I am about to drink, using names that mean little to nothing to me. This chapter