

SANFORD, MALCOLM T., AND BONNEY, RICHARD E. 2010. *Storey's Guide to Keeping Honey Bees*. Storey Publishing, North Adams, Massachusetts, x + 244 pp. ISBN 978-1-60342-550-6, paperback, \$19.95.

Thirty years ago, keeping honey bees was a much simpler endeavor than it is today. Knowledge and experience were needed to adequately manage bee colonies, especially if a profit from honey production was expected. Insecticides killing bees was a concern, but American foulbrood disease was the biggest problem. That could be largely avoided by the novice beekeeper if new hives were used and swarms, readily available in the spring, were captured to fill them. Beekeeping could be quite forgiving. Bees kept in man-made hives could largely take care of themselves and required little help, yet provide a surplus of honey. Beekeepers could make a living, albeit modest, without as much biological knowledge and business savvy needed now. Honey and beeswax have been valued by mankind for millennia, whereas keeping stinging insects was considered to be a peculiar activity by an eccentric few.

How things have changed! Starting in the mid-1980s, an eruption of devastating problems, one after another, has destroyed millions of colonies of our beloved honey bee worldwide, thus ending many beekeeping businesses, and, in turn, affecting human and animal food production dependent on honey bee pollination. Beekeepers must now be fully aware of these continuing threats, obtain a good knowledge of bee biology, and acquire additional management skills that involve control measures, so that their bees can simply survive, much less thrive. Although very late in coming, the news media brought the plight of the bees to the public's attention, making people more aware of the essential role of the honey bee as a pollinator of agricultural crops, rather than just as a honey maker. Long overdue, beekeepers are viewed as the very important players, that they are, in the production of many foods. Beekeeping is suddenly a "cool" thing to do. This attention led to an increasing number of people who wish to start keeping bees. Many are mainly interested in the bees, but usually with the expectation of having their own source of honey. Others are owners of small gardens or farms hoping to ensure pollination, and a few envision a hobby that might turn into a business. But the very problems that have attracted attention to beekeeping also make successful starts more uncertain. Thus, this book is intended for prospective beginners, making them aware of the challenges of current-day beekeeping and providing basic knowledge to get started.

Dr. Malcolm Sanford, now professor emeritus, had been for 20 years the apicultural extension specialist in the Department of Entomology and Nematology at the University of Florida. During his tenure at the university, he wrote numerous

extension articles about beekeeping. These included the "Apis" newsletter, "Hints for the Hive" that covered many interesting and useful beekeeping topics, as well as articles for the major honey bee journals. For years, Dr. Sanford ran the "Beekeeper's Institute"<sup>\*</sup>, continuing a Florida tradition started years before by his predecessors. The summer weekend event gave hobby beekeepers an opportunity to mingle with and learn from commercial operators, for all to hear presentations by bee scientists and to participate in open-hive demonstrations. Thus, Dr. Sanford is highly qualified to have written this book, a greatly updated version of what had been two volumes first written in the early 1990s by the late Richard Bonney of Massachusetts.

The book has ten chapters, followed by a short glossary, a model beekeeping ordinance, a sample pollination contract, a list of U.S. beekeeping supply houses, sources of beekeeping information, and the index. The text is quite readable, written in a somewhat casual style. Interspersed throughout are boxes, many with quotes from new and advanced beekeepers, relating positive experiences balanced by a few not-so-positive. Other boxes elaborate on points made in the text. Pen drawings are also throughout the book. Dr. Sanford makes the point that he does not cover all the information that one should know and that is available. He strongly encourages beginners to subscribe to beekeeping journals, read other books, access websites, join beekeeping organizations, and seek mentors.

Advice and commentary gained from experience but seldom written, or not at all, in more formal and technical beekeeping books are provided through most of this book, particularly in the first chapter "Beginning Beekeeping". Right away, seven tips are presented, such as making sure that you really need all the items before buying a "beginner's outfit", and start with new equipment, packages of bees, early in the season. The rest of the chapter addresses broader points that must be understood before embarking on a beekeeping adventure: the commitment to learn about bee biology and management practices, the time commitment needed to work with the bees, financial considerations (an investment that will not have a return for a while), coping with stings, and legal considerations. The chapter gives a strong dose of reality, but intermixed with comments by the author and others that convey the fun, excitement, and persistent love of the craft. The chapter is a valuable service to those contemplating a start with bees, letting them know what to expect, so that they do not invest hope and money before learning these things and then becoming dismayed and discouraged.

The second chapter has a brief history of beekeeping, from prehistoric times (i.e. a cave drawing), through the development of the modern beehive and ending with the challenges of today. The third chapter covers basic bee biology: short sections on bee anatomy physiology, and development, followed by nest structure, and caste organization of the colony. The three bee members of a colony, the queen, worker, and drone, and their respective roles are described, including worker chores that change seasonally and as they age. The parasitic mite *Varroa* is included here as the fourth member of a colony, to emphasize that hereafter it will be omnipresent, cannot be eliminated, and will always need to be considered in honey bee management. Aspects of bee behavior, such as communication, thermoregulation, and colony reproduction by swarming are discussed. Swarming is brought up again later in the book, emphasizing that it is a strong natural drive that must be suppressed through management to obtain a good honey crop.

Chapters 4 through 8 focus on the how-to parts of beekeeping: choosing a hive location, obtaining and constructing equipment, obtaining the bees, managing the hives, and taking the crop. These chapters touch upon many important points of beekeeping, introducing the novice beekeeper to what must be learned. Some detail is provided, whereas other details would need to be sought elsewhere or would require demonstration by experienced beekeepers. Again, it is the advice and commentary that make these chapters unique: a list of ways to reduce defensive stinging by the bees; the use of wire excluders to keep queens, and hence brood, out of supers intended for honey, but that can also exclude workers carrying nectar or honey; problems today collecting swarms to stock hives, as a possible source of parasites and pathogens, and discouraged or even illegal in some southern states because they may be African bees; the "Tao of Smoking Bees", encouraging judicious use to calm rather than further excite bees; crawling bees at night; starting with two colonies rather than one, so that one can provide brood and food to the other that might be failing - this tip is first mentioned in the figure on the first page of the first chapter; not leaving honey supers off the hive for long before extracting to avoid ruinous damage by hive beetles. Bee products other than honey and wax are included as crops that

can be taken. The purported benefits of royal jelly are questioned, and the largely unrecognized value and uses of propolis are mentioned. Chapter 9 gives additional considerations for those hoping to rent bee colonies for crop pollination: the importance of a written contract with the grower (an example provided near the back of the book), and not to expect a significant honey crop from colonies rented for pollination.

Chapter 10, "Diseases and Pests of the Honey Bee," is the most detailed of the chapters, evidently because among these are the serious threats that now make beekeeping more difficult and reduce the chance of success by the beginner. The long familiar diseases and pests include American foulbrood, the far less serious European foulbrood, the protozoan *Nosema apis*, the wax moth, and the black bear. The more recent, particularly harmful, agents include the tracheal and *Varroa* mites, the secondary serious damage they cause as vectors of viral diseases, and the devastating small hive beetle scavenger. The causes have not yet been clearly identified for the perplexing Colony Collapse Disorder. Chemical and physical treatments are described, if available, along with notes about the adverse results caused by the chemical controls. Current promising efforts to select stocks of bees resistant to the diseases and parasitic mites are mentioned.

I strongly recommend this book for whom it is intended, those seriously thinking about entering or have recently begun this symbiotic relationship with these marvelous creatures. Because more experienced beekeepers are approached by individuals hoping to get started or are called upon make presentations to their community about bees, they too may wish to have this book. Through their own experience, they would likely be familiar and concur with the advice given, but it may not otherwise occur to them to mention it. They may wish to have a copy on hand to encourage inquiring individuals to have one as well.

\*The "Beekeeper's Institute" was resurrected five years ago as the "Bee College" by Dr. Sanford's successor Dr. Jamie Ellis. The event, held annually in March, is highly popular, sophisticated, and educational.

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