IN THIS CHAPTER

- Finding out about the many benefits of beekeeping
- Deciding whether beekeeping is for you
- Choosing which beekeeping approach to take

Chapter 1

To Bee, or Not to Bee?

I've been keeping bees in my backyard since 1983, and I have a confession to make — I really love my bees. That may sound weird to you if you aren't a beekeeper (yet!), but virtually all individuals who keep bees will tell you the same thing and speak with affection about "their girls." They can't wait until their next opportunity to visit their hives. They experience a true emotional loss when their bees don't make it through a bad winter. Beekeepers, without a doubt, develop a special bond with their bees.

Since becoming a backyard beekeeper, I've grown to deeply admire the remarkable qualities of these endearing creatures. As a gardener, I've witnessed firsthand the dramatic contribution they provide to flowering plants of all kinds. With honey bees in my garden, its bounty has increased by leaps and bounds. And then there's that wonderful bonus that they generously give me: a yearly harvest of sweet liquid gold.

After you get to know more about bees' value and remarkable social skills, you'll fall in love with them, too. They're simply wonderful little creatures. Interacting with them is a joy and a privilege. People who love nature in its purest form will love bees and beekeeping.

That being said, in this chapter, I help you better understand the remarkable and bountiful little honey bee by looking at its history and the value it brings to our lives. I also discuss the benefits of beekeeping and why you should consider it as a hobby — or even a small business venture. This chapter outlines the benefits of keeping bees, offers an overview of what is required to keep bees, and explains the various approaches you can take to keep your bees healthy.

THE PREHISTORIC BEE

Bees have been around for a long, long time, gathering nectar and pollinating flowers. They haven't changed much since the time of the dinosaurs. The insect shown in the following figure is definitely recognizable as a bee. It was caught in a flow of pine sap 30 million to 40 million years ago and is forever preserved in amber.

Courtesy of Mario Espinola

Discovering the Benefits of Beekeeping

Why has mankind been so interested in beekeeping over the centuries? I'm sure that the first motivator was *honey.* After all, for many years and long before cane sugar, honey was the primary sweetener in use. I'm also sure that honey remains the principal draw for many backyard beekeepers. Chapters 15 through 17 explain about all the different kinds of honey, its culinary attraction, and how to produce, harvest, and market your honey.

But the sweet reward is by no means the only reason folks are attracted to beekeeping. Since the 18th century, agriculture has recognized the value of pollination by bees. Without the bees' help, many commercial crops would suffer serious consequences. More on that later. Even backyard beekeepers witness dramatic improvements in their garden: more and larger fruits, flowers, and vegetables. A hive or two in the garden makes a big difference in your success as a gardener.

The rewards of beekeeping extend beyond honey and pollination. Bees also produce other products that can be harvested and put to good use, including beeswax, propolis, and royal jelly. Even the pollen they bring back to the hive can be harvested (it's rich in protein and makes a healthy food supplement in our own diets). Chapter 18 includes a number of fun and practical things you can do with beeswax and propolis.

Harvesting liquid gold: Honey

The prospect of harvesting honey is certainly a strong attraction for new beekeepers. There's something magical about bottling your own honey. And I can assure you that no other honey tastes as good as the honey made by your own bees. Delicious! Learn all about honey varieties, tasting, and pairing with food in Chapter 15. And be sure to have a look at Chapter 20, where I list ten of my favorite recipes for cooking with honey.

How much honey can you expect? The answer to that question varies depending on factors such as temperature, rainfall, location, and strength of your colony. But producing 40 to 70 pounds or more of surplus honey isn't unusual for a single strong colony. Chapters 15 through 17 provide plenty of useful information on the kinds of honey you can harvest from your bees and how to go about it. Also included are some suggestions on how you can go about selling your honey — how this hobby can boast a profitable return on investment!

Bees as pollinators: Their vital role to our food supply

The survival of flowering plants depends upon pollination. Any gardener recognizes the value of pollinating insects, birds, bats, and even the wind. This is an essential service in the production of seed and fruit. You may not have thought much about the role honey bees play in our everyday food supply. It is estimated that in North America around 30 percent of the food we consume is produced from bee-pollinated plants. Bees also pollinate crops, such as clover and alfalfa that cattle feed on, making bees important to our production and consumption of meat and dairy. The value of pollination by bees is estimated at around $20 billion in the United States alone.

These are more than interesting facts; these are realities with devastating consequences if bees were to disappear. And sadly, the health of honey bees has been compromised in recent years (see the later section "Being part of the bigger picture: Save the bees!"). Indeed a spring without bees could endanger our food supply and impact our economy. It's a story that has become headline news in the media.

HONEYBEE OR HONEY BEE?

This is a "tomato/to*mah*to" issue. The British adhere to their use of the one word: "honeybee." The Entomological Society of America, however, prefers to use two words "honey bee." So that's the version I use in this book. Here's the society's rationale: The honey bee is a true bee, like a house fly is a true fly, and thus should be two words. A dragonfly, on the other hand, is not a fly; hence, it is one word. ***Tip:*** Spell it both ways when web surfing. That way, you'll cover all bases and hit all the sites!

WHY BEES MAKE GREAT POLLINATORS

About 100 crops in the United States depend on bees for pollination. Why is the honey bee such an effective pollinator? Because she's uniquely adapted to the task. Here are several examples of bee adapations:

- The honey bee's anatomy is well suited for carrying pollen. Her body and legs are covered with branched hairs that catch and hold pollen grains. The bee's hind legs contain *pollen baskets* that the bee uses for transporting pollen, a major source of food, back to the hive. If the bee brushes against the stigma (female part) of the next flower she visits, some of the pollen grains brush off, and the act of cross-pollination is accomplished.
- Most other insects are dormant all winter. They initialy emerge in spring only in small numbers until increasing generations have rebuilt the population of the species. Not the honey bee. Its hive is perennial. The honey bee overwinters with large numbers of bees surviving on stored honey and pollen. Early in the spring, the queen begins laying eggs, and the already large population explodes. When flowers begin to bloom, each hive has tens of thousands of bees to carry out pollination activities. By midsummer, an individual hive contains upward of 60,000 bees.
- The honey bee has a unique habit that's of great value as a pollinator. It tends to forage on blooms of the same kind, as long as they're flowering. In other words, rather than traveling from one flower type to another, honey bees are flower constant. This focus makes for particularly effective pollination. It also means that the honey they produce from the nectar of a specific flower takes on the unique flavor characteristics of that flower — that's how we get specific honey flavors, such as orange blossom honey, buckwheat honey, blueberry honey, lavender honey, and so on (see Chapter 15 for a lesson in how to taste and evaluate honey varieties).
- The honey bee is one of the only pollinating insects that can be introduced to a garden at the gardener's will. You can garden on a hit-or-miss basis and hope that

enough wild bees are out there to achieve adequate pollination — or you can take positive steps and nestle a colony of honey bees in a corner of your garden. Some commercial beekeepers make their living by renting colonies of honey bees to farmers who depend on bee pollination to raise more bountiful harvests. Known as *migratory beekeepers*, they haul hundreds of hives across the country, following the various agricultural blooms — to California for almond pollination in February, to the apple orchards in Washington in April, to Maine in May for blueberry pollination, and so on.

I've witnessed the miracle in my own garden: more and larger flowers, fruits, and vegetables — all the result of more efficient pollination by bees. After seeing my results, a friend who tends an imposing vegetable garden begged me to place a couple of hives on her property. I did, and she too is thrilled. She rewards me with a never-ending bounty of fruits and vegetables. And I pay my land-rent by providing her with 20 pounds of honey every year. Not a bad barter all around.

Being part of the bigger picture: Save the bees!

Keeping a hive in the backyard dramatically improves pollination and rewards you with a delicious honey harvest by themselves good enough reasons to keep bees. But today, the value of keeping bees goes beyond the obvious. In many areas, millions of colonies of wild (or *feral*) honey bees have been wiped out by urbanization, pesticides, parasitic mites, and a recent phenomenon called *colony collapse disorder* (otherwise known as CCD; see Chapter 11 for more information). Collectively, these challenges are devastating the honey bee population.

Many gardeners have asked me why they now see fewer and fewer honey bees in their gardens. It's because of the dramatic decrease in our honey bee population. Backyard beekeeping has become vital in our efforts to reestablish new colonies of honey bees and offset the natural decrease in pollination by wild honey bees. I know of many folks who have started beekeeping just to help rebuild the honey bee population. A number of celebrities have become hobbyist beekeepers and publically promote the need to save bees. These high profile beekeepers include Morgan Freeman, Bruce Springsteen, Leonardo Di Caprio, Jennifer Garner, Scarlet Johansson, Jon Bon Jovi, and Samuel L. Jackson, to name a few.

Getting an education: And passing it on!

As a beekeeper, you continually discover new things about nature, bees, and their remarkable social behavior. Just about any school, nature center, garden club, or youth organization would be delighted for you (as a beekeeper) to share your

knowledge. Each year I make the rounds with my slide show and props, sharing the miracle of honey bees with communities near and far. On many occasions, local teachers and students have visited my house for an on-site workshop. I've opened the hive and given each wide-eyed students a close-up look at bees at work. Spreading the word to others about the value these little creatures bring to all of us is great fun. You're planting a seed for our next generation of beekeepers. After all, a grade-school presentation on beekeeping is what aroused my interest in honey bees.

BEE HUNTERS, GATHERERS, AND CULTIVATORS

An early cave painting in Biscorp, Spain, circa 6000 BC, shows early Spaniards hunting for and harvesting wild honey (see the accompanying figure). In centuries past, honey was a treasured and sacred commodity. It was used as money and praised as the nectar of the gods. Methods of beekeeping remained relatively unchanged until 1852 with the introduction of today's "modern" removable-frame hive, also known as the Langstroth hive. (See Chapter 4 for more information about Langstroth and other kinds of beehives.)

Courtesy of Howland Blackiston

Improving your health: Bee therapies and stress relief

Although I can't point to any scientific studies to confirm it, I honestly believe that tending honey bees reduces stress. Working with my bees is so calming and almost magical. I am at one with nature, and whatever problems may have been on my mind tend to evaporate. There's something about being out there on a lovely warm day, the intense focus of exploring the wonders of the hive, and hearing that gentle hum of contented bees — it instantly puts me at ease, melting away whatever day-to-day stresses I may find creeping into my life.

Any health food store proprietor can tell you the benefits of the bees' products. Honey, pollen, royal jelly, and propolis have been a part of healthful remedies for centuries. Honey and propolis have significant antibacterial qualities. Royal jelly is loaded with B vitamins and is widely used around the world as a dietary and fertility stimulant. Pollen is high in protein and can be used as a homeopathic remedy for seasonal pollen allergies (see the sidebar "Bee pollen, honey, and allergy relief" in this chapter).

BEE POLLEN, HONEY, AND ALLERGY RELIEF

Pollen is one of the richest and purest of natural foods, consisting of up to 35 percent protein and 10 percent sugars, carbohydrates, enzymes, minerals, and vitamins A (carotenes), B1 (thiamin), B2 (riboflavin), B3 (nicotinic acid), B5 (panothenic acid), C (ascorbic acid), H (biotin), and R (rutine).

Here's the really neat part: Ingesting small amounts of pollen every day can actually help reduce the symptoms of pollen-related allergies — sort of a homeopathic way of inoculating yourself. The key is to use pollen that is harvested from your general region.

Of course you can harvest pollen from your own bees and sprinkle a small amount on your breakfast cereal or in yogurt (as you might do with wheat germ). But you don't really need to harvest the pollen itself. That's because raw, natural honey contains bits of pollen. Pollen's benefits are realized every time you take a tablespoon of honey. Eating local honey every day can relieve the symptoms of pollen-related allergies if the honey is harvested from within a 50-mile radius of where you live or from an area where the vegetation is similar to what grows in your community. The best part if you have your own bees, allergy relief is only a sweet tablespoon away!

Apitherapy is the use of bee products for treating health disorders. Even the bees' venom plays an important role here — in bee-sting therapy. Venom is administered with success to patients who suffer from arthritis and other inflammatory/medical conditions. This entire area has become a science in itself and has been practiced for thousands of years in Asia, Africa, and Europe. An interesting book on apitherapy is *Bee Products — Properties, Applications and Apitherapy: Proceedings of an International Conference Held in Tel Aviv, Israel, May 26–30, 1996,* published by Kluwer Academic Publishers.

Determining Your Beekeeping Potential

How do you know whether you'd make a good beekeeper? Is beekeeping the right hobby for you? Here are a few things worth considering as you ponder these issues.

Environmental considerations

Unless you live on a glacier or on the frozen tundra of Siberia, you probably can keep bees. Bees are remarkable creatures that do just fine in a wide range of climates. Beekeepers can be found in areas with long, cold winters; in tropical rain forests; and in nearly every geographic region in between. If flowers bloom in your part of the world, you can keep bees.

How about space requirements? You don't need much. I know many beekeepers in the heart of Manhattan. They have a hive or two on their rooftops or terraces. Keep in mind that bees travel two to three miles from their hive to gather pollen and nectar. They'll forage an area as large as 8,500 acres. So the only space that you need is enough to accommodate the hive itself.

See Chapter 3 for more specific information on where to locate your bees, in either urban or suburban situations.

Zoning and legal restrictions

Most communities are quite tolerant of beekeepers, but some have local ordinances that prohibit beekeeping or restrict the number of hives you can have. Some communities let you keep bees but ask that you register your hives with local authorities. Check with local bee clubs, your town hall, your local zoning board, or your state's Department of Agriculture (bee/pollinating insects division) to find out about what's okay in your community.

Obviously you want to practice a good-neighbor policy so folks in your community don't feel threatened by your unique new hobby. See Chapter 3 for more information on the kinds of things you can do to prevent neighbors from getting nervous.

Costs and equipment

What does it cost to become a beekeeper? All in all, beekeeping isn't a very expensive hobby. You can figure on investing about $200 to $400 for a start-up hive kit, equipment, and tools — less if you build your own hive from scratch (find out how to do it in my book, *Building Beehives For Dummies,* published by Wiley). You'll spend around $175 or more for a package of bees and queen. For the most part, these are one-time expenses. Keep in mind, however, the potential for a return on this investment. Each of your hives can give you 40 to 70 pounds of honey every year. At around $8 per pound (a fair going price for all-natural, raw honey), that should give you an income of $320 to $560 per hive! Not bad, huh?

See Chapter 5 for a detailed listing of the equipment you'll need.

How many hives do you need?

Most beekeepers start out with one hive. And that's probably a good way to start your first season. But most beekeepers wind up getting a second hive in short order. Why? For one, it's twice as much fun! Another more practical reason for having a second hive is that recognizing normal and abnormal situations is easier when you have two colonies to compare. In addition, a second hive enables you to borrow bees/honey from a stronger, larger colony to supplement one that needs a little help. My advice? Start with one hive during your first season until you get the hang of things and then by all means consider expanding in your second season.

What kind of honey bees should you raise?

The honey bee most frequently raised by beekeepers in the United States today is European in origin and has the scientific name *Apis mellifera.*

Of this species, one of the most popular variety is the so-called Italian honey bee. These bees are docile, hearty, and good honey producers. They are a good choice for the new beekeeper. But there are notable others to consider. It can be great fun to to experiment with different varieties. See Chapter 6 for more information about different varieties of honey bees.

KNOWING WHERE HONEY BEES COME FROM

Honey bees are native to Europe, Asia, and Africa, but they're not native to other parts of the world (Australia, New Zealand, and the Americas). Colonies of German black honey bees were first brought to North America in the early 1600s by Virginia and Massachusetts colonists. The honey was used by the pioneers as their chief sweetener. These bees prospered and gradually colonized all of North America. But the black bee populations were seriously compromised by disease in the early 1800s and were ultimately replaced by Italian honey bees. Today, honey bees have become a vital part of our agricultural economy. Honey bees didn't reach Australia and New Zealand until the early- to mid-1800s.

Time and commitment

Beekeeping isn't labor intensive. Sure, you'll spend part of a weekend putting together your new equipment. And I anticipate that you'll spend some time reading up on your new hobby. (I sure hope you read my book from cover to cover!) But the actual time that you absolutely *must* spend with your bees is surprisingly modest. Other than your first year (when I urge you to inspect the hive frequently to find out more about your bees), you need to make only five to eight visits to your hives every year. Add to that the time you spend harvesting honey, repairing equipment, and putting things away for the season, and you'll probably devote 35 to 40 hours a year to your hobby. Of course it will take more time if you make a business out of it.

For a more detailed listing of seasonal activities, be sure to read Chapter 9.

Beekeeper personality traits

If you scream like a banshee every time you see an insect, I suspect that beekeeping will be an uphill challenge for you. But if you love animals, nature, and the outdoors, and if you're curious about how creatures communicate and contribute to our environment, you'll be captivated by honey bees. If you like the idea of "farming" on a small scale, or you're intrigued by the prospect of harvesting your own all-natural honey, you'll enjoy becoming a beekeeper. Sure, as far as hobbies go, it's a little unusual, but all that's part of its allure. Express your uniqueness and join the ranks of some of the most delightful and interesting people I've ever met: backyard beekeepers!

Allergies

If you're going to become a beekeeper, you can expect to get stung once in a while. It's a fact of life. But when you adopt good habits as a beekeeper, you can minimize the chances that you'll be stung.

All bee stings will hurt, but not for long. It's natural to experience some swelling, itching, and redness. These are *normal* (not allergic) reactions. Some folks are mildly allergic to bee stings, and the swelling and discomfort may be more severe. The most severe and life-threatening reactions to bee stings occur in less than 1 percent of the population. So the chances that you're dangerously allergic to honey bee venom are remote. If you're uncertain, check with an allergist, who can determine whether you're among the relatively few who should steer clear of beekeeping. Your allergist can test you in advance for a sting allergy.

You'll find more information on bee stings in Chapter 3.

Deciding Which Beekeeping Approach to Follow

Historically, beekeeping books have provided information on when and how to medicate your bee colonies and which chemicals to use for controlling pests that can compromise the health and productivity of your colonies. If you go online and visit beekeeping supply vendors, they all offer medications and pest control products to help bees when things go wrong.

But in recent years, because of all the problems that bees have been facing, it has become prudent to take a fresh look at these historical approaches to caring for and medicating your bees. Are treatments being overused? Probably. Are less-experienced beekeepers simply misusing these products to the detriment of our bees? Likely. Should you routinely medicate bees as so many traditional beekeeping books of the past recommend? Doubtful. Or should you embrace a more *natural* approach with little or no use of medications or chemicals? I recommend it.

Clearly, there are many choices out there. This is a hot topic, and you will hear passionate arguments for and against the various possible options for various treatments. To decide which is right for you, it's first helpful to define each of the new approaches that are being discussed in today's world of beekeeping.

As a new beekeeper, you need to decide which approach or combination of approaches makes the most sense to you. I do my best to explain the options available to you and tell you about my own experiences. But it's up to you in the end. Pick an approach and stick to it until you find a better one. And be aware that if you ask ten beekeepers which is best, you will likely get ten different answers.

Medicated beekeeping

Medicated beekeeping is a term intended to represent the "traditional" approach to honey-bee health that has been touted for decades in many of the books on beekeeping (including the first edition of this book). Indeed for generations, beekeepers were advised to follow an established yearly protocol of medications and chemical treatments as part of the yearly routine. As bees faced more and more health issues, more and more chemical options came to market intended to help bees thrive. Many of these meds were administered prophylactically by well-intended beekeepers, just in case the bees might get ill — not because they needed it. I have no doubt that over time, with the growth of new hobbyist beekeepers, the increase in bee health problems, a plethora of new medications, and the possible overuse or misuse of these meds, the traditional ways outlined in so many earlier books will need to be rethought.

Natural beekeeping

If you check the Internet, you'll find many opinions on what constitutes a *natural* approach to keeping bees. There is no universal definition. Natural beekeeping is more of an aspiration than an official set of rules. But still it's helpful to have a shorthand description that captures the *goal* of natural beekeeping. So I went to the expert. I asked Ross Conrad, author of *Natural Beekeeping, Organic Approaches to Modern Apiculture* (Chelsea Green Publishing), to share his definition:

"When working on my book, my publisher and I settled on the title *Natural Beekeeping*. In retrospect, I realize that the term *natural beekeeping* is an oxymoron. A colony of bees that is manipulated by a person is no longer in its true, natural state. That said, the term natural beekeeping is used to refer to honey bee stewardship that addresses pest, disease, and potential starvation issues without relying on synthetic pesticides, antibiotic drugs, or the regular use of an artificial diet."

Ross went on to tell me, "Natural beekeeping does not necessarily mean minimal manipulations and it definitely does not mean minimal hive inspections (as some have defined the term). If you are not regularly inspecting your colonies, you are unable to determine their needs, and you will be unable to take timely steps to keep your colonies viable. Minimal or no hive inspections is honey bee neglect, not natural bee stewardship."

Organic beekeeping

Organic beekeeping is related to, but not the same as, natural beekeeping. There are a lot of written criteria available on what constitutes organic beekeeping. This material is currently being developed in minutiae for publication by various branches of the U.S. government and will ultimately be published as United States Department of Agriculture (USDA) standards to govern the production of organic honey and honey-related products.

Under proposed guidelines, the use of some medications and chemical treatments is likely to be okay. To run a certified organic beekeeping operation, be prepared to take on a lot of work and make a sobering investment. Not too practical for the average backyard beekeeper. For the latest status of the new organic beekeeping regulations (known as Organic Apiculture Practice Standard, NOP-12-0063), visit the U.S. General Services Administration (GSA), Office of Information and Regulatory Affairs at `www.reginfo.gov`.

Combining approaches

Okay. Here's my take on all of this. I don't personally follow any one of the medicated, natural, or organic approaches exclusively. In my view, there are no absolutes. I have no need to be certified as organic, so I choose not to go down that path. Generally speaking, I do not use chemicals "just in case" I may have a problem with pests. Nor do I typically medicate my bees as a preventive measure, but only when absolutely necessary, and only when other nonchemical options have not been effective. The same is true at home. I certainly don't take antibiotics whenever I feel sick or if I think I might get sick. But rest assured, if I came down with bacterial pneumonia, I would likely be asking my doc for antibiotics. And I certainly vaccinate my sweet golden retriever to keep her free of distemper. So my personal approach does not eliminate any use of medications, but rather follows a thoughtful, responsible approach that aspires to be as *natural* as possible. Like me, you may want to make choices based on what feels right to you.

TIP

In this edition, I have included lots of information that highlights alternative, more natural approaches to beekeeping than are found in books published in years past. Look for the All Natural icon to easily identify suggestions for those of you (like me) who are aspiring to minimize the use of medications and chemicals.