



# The Bountiful Bee

By G. Howland Blackiston

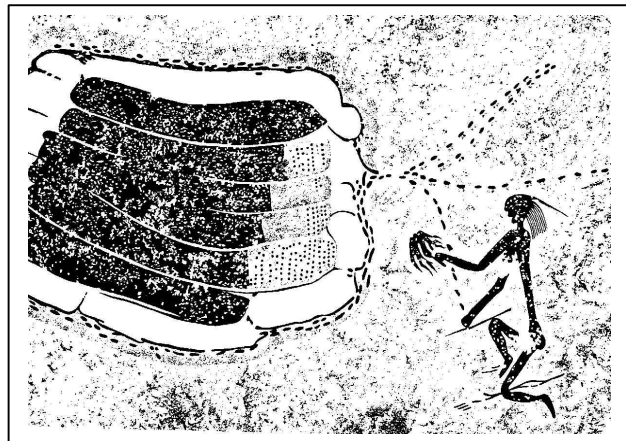
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Is it possible to love an insect? I never would of thought so 15 years ago. But that was before I began my adventure in beekeeping. Since becoming a back yard beekeeper, I have grown to deeply admire the remarkable qualities of these endearing creatures of nature. And as a gardener, I have witnessed first-hand the dramatic contribution they provide to plants of all kinds. With honeybees in my garden, it's bounty has increased by an order of magnitude. And then there is that wonderful bonus they generously give me: a yearly harvest of sweet liquid gold.

## The History of Beekeeping

The archaeology of beekeeping has a long and rich history. Bees have been pollinating plants and collecting honey for many millions of years before man existed. The earliest direct evidence of primitive man developing an affinity with bees comes from early rock paintings in eastern Spain (c 6000 B.C.). These illustrations depict the hunting of wild bees and the harvesting of honey and beeswax. Such early depictions show evidence that these products were highly valued. Indeed, in many societies the honeybee became regarded as magical and even divine.

The earliest certain evidence of domestic beekeeping comes from Egypt. These tomb paintings (c.2400 B.C.) show that the keeping of bees was already a well-developed craft. Ancient accounts of bees and their importance to mankind (for pollination, as a food source and for medicine) may be found throughout Africa, the Middle East, Europe and Asia.



In Europe, beginning in about 1300, beekeeping became an integral part of traditional gardens. The very architecture and design of many formal English gardens included the provision for hives. Masonry garden walls were fitted with bee boles (recesses or niches built into the wall) and hives made from straw baskets (skeps) were set snugly into the protected recesses. In other designs, skeps were placed into more elaborate free-standing bee houses. The methods of beekeeping remained relatively unchanged until 1852 with the introduction of today's "modern" interchangeable-frame hive. This now-familiar style was perfected by Rev. Lorenzo Lorraine Langstroth in Philadelphia, USA. The modular design of the hive allows for the removal and inspection of frames of honeycomb, and the harvesting of honey without destroying the hive.

It is interesting to note, that despite the now-critical role honeybees play in pollinating crops in the USA, the honeybee is not native to the Americas. Hives of European

honeybees (*Apis mellifera*) were first shipped to Virginia from 1621 onwards. These bees prospered and gradually colonized all of North America. Today they have become a vital part of our agricultural economy.

### **The Value of Pollination**

Any gardener recognizes the value of pollinating insects. Such insects provide an essential service in the production of seed and fruit. The very survival of plants depends upon pollination. Bees are credited with over one-third of the food we eat because of their pollination efforts. So, farmers are very aware of the indispensable role the honeybee plays in our economy.

*Table: Pollination experiments  
W.R. Roach Company Orchards and other sources*

<b>Crop</b>	<b>Without honeybees</b>	<b>With honeybees</b>
Pears	<b>99lbs fruit</b>	<b>344lbs fruit</b>
Alfalfa	<b>125lbs seed per hectare</b>	<b>441lbs seed per hectare</b>
Apples	<b>25 apples per tree</b>	<b>1200 apples per tree</b>

### **Honeybees as Pollinators**

The honeybee accounts for 80% of all pollination by insects. Indeed, about 90 crops in the USA depend upon bees for pollination. Why is the honeybee so effective a pollinator? Because she is uniquely adapted to the task. Here are several examples:

- 1.) The honeybee's anatomy is well suited to act as a carrier of pollen. Its body and legs are covered with hairs that catch and hold pollen grains. The hind legs of the bee contain "pollen baskets" used by the bee to transport pollen back to the hive (pollen is used by the bees as a major food source). Should the bee brush against the stigma of the next flower visited and brush off some of the pollen grains held in her body hairs, the act of cross-pollination is complete.
- 2.) Most other insects lie dormant all winter, and in spring emerge only in very small numbers, until increasing generations have re-built the population of the species. Not the honeybee. Its hive is perennial. The honeybee winters over in very large numbers feeding on stored honey. Early in the spring the queen begins to lay eggs and the already large population explodes. When the flowers begin to appear, each hive has tens of thousands of bees to carry out pollination activities. By mid summer, an individual hive contains upwards of 80,000 bees.
- 3.) The honeybee has a unique habit that is of great value as a pollinator. It tends to forage on flowers of a single type, and will continue to do so as long as that plant is in flower. In other words, honeybees are flower-consistent. This focus makes for particularly effective pollination.
- 4.) Finally, the honeybee is the only insect that can be introduced to the garden at the will of the gardener. You could garden on a hit-or-miss basis and hope there

are enough wild bees to achieve adequate pollination – or you can take positive steps and nestle a colony of honeybees in a corner of your garden.

The back yard gardeners who keep bees witness dramatic increases in the number and size of their flowers, and in the yield and quality of their vegetables. There is tremendous value and pleasure in keeping a hive or two in the garden. I have witnessed the miracle in my own garden. After seeing my results, a neighbor who tends an imposing vegetable garden begged me to place a couple of hives on her property. I did, and she is thrilled with the results in her own garden. A favor for which she richly rewards me with a seemingly never-ending bounty of fruits and vegetables. I pay my annual rent for using her land by providing her with 20 pounds of honey. Not a bad barter all around.

Today the value of keeping bees in the garden is more important than ever. In the USA, millions of colonies of wild (feral) honeybees have been wiped out by urbanization, pesticides and parasitic mites that have devastated the wild honeybee population. Many gardeners have asked me why they now see fewer and fewer honeybees in their gardens. They are witness to the dramatic decrease in our honeybee population. So the contribution of backyard beekeeping has become vital in our efforts to re-establish lost colonies of bees. And the establishment of honeybees in the garden offsets the natural decrease in pollination by wild bees.

We are seeing a dramatic growth in the interest of keeping bees as a hobby. More and more people are becoming beekeepers, so as to become more closely associated with these interesting insects, and to benefit from their labors of pollination and honey production. It is estimated that there are more than 250,000 hobbyist beekeepers in the USA.

### **How Much Time Does it Take?**

Keeping bees is not a labor-intensive activity. One only needs to schedule about six visits to the hive in a year. Each visit usually occupies less than an hour of time. So, the actual time you must devote as a beekeeper is not intense. Usually the challenge is disciplining yourself not to spend too much time disturbing the bees. The tendency is to want to peek within the hive every weekend. The inner workings of the hive become simply fascinating and it is difficult to stay away. But too many visits only interrupt the productivity of the hive.

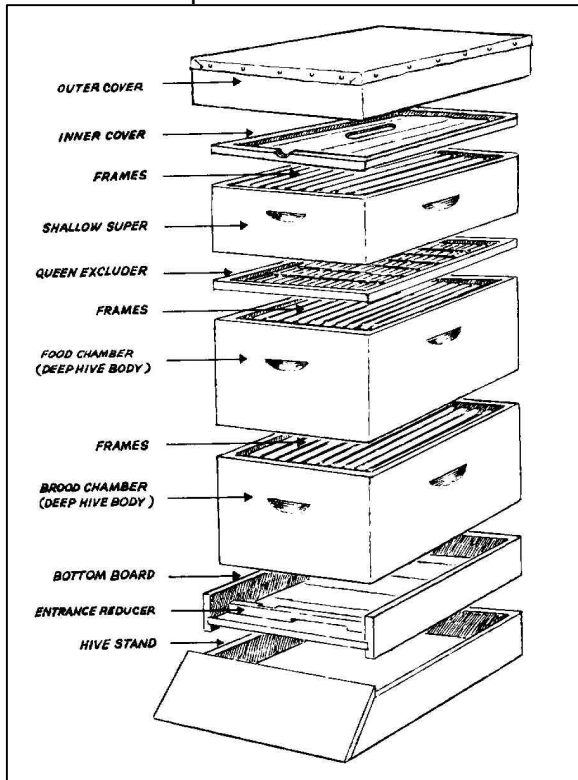
### **What to Look For When Inspecting Bees**

The beekeeper inspects the hives to ensure there is a queen laying lots of eggs (she is capable of laying 2000 eggs a day). The more bees, the more pollination and the more honey. The beekeeper is also looking for any signs of trouble: no queen; disease, not enough food for the bees, etc. Inspections are also to determine when it's time to give the bees more room for their expanding colony.

### **The Tools of the Trade**

Today's modern hive consists of four-sided wooden boxes each containing ten wood frames of pure beeswax foundation. The bees manufacture their own beeswax and draw this foundation into thousands of deep cells. The cells become the receptacles for raising their brood, and the storage of honey and pollen. A hive consists of two deep hive boxes. The lower deep is used by the queen to raise new generations of bees (the

brood chamber). The upper deep is used for food storage (the food chamber). A removable top cover serves as the roof. This configuration forms the basic hive.



Beekeepers interested in harvesting honey add a series of shallow boxes and frames above the top deep. It is in these shallow "supers" that the bees store surplus honey. This is the honey the beekeeper may harvest. The number of shallow supers added are a function of how much honey the hive is able to produce in a season. The more honey, the more supers and the taller the hive grows. Typically a hive will produce 60-100 pounds of surplus honey in a season.

The beekeeper makes use of two basic tools. A steel hive tool assists with the prying open of the hive bodies and the removal of the frames for inspection. The beekeeper's smoker is used to calm the bees before opening the hive for inspection. This is nothing more than a portable stove with bellows and a nozzle. Rags, burlap, wood shavings, pine needles or leaves are used as fuel, and smolder to produce billows of cool, thick smoke.

### The Ouch Part of Beekeeping

A natural early apprehension is "will I get stung", or, "is this safe"? The honeybees bred for beekeeping are actually very gentle in disposition. They are not aggressive, and will not attack unless provoked. They die shortly after stinging, and will usually only resort to stinging if their hive is being attacked. Using smoke and some sensible management techniques, the backyard beekeeper will have no problem handling bees without incident. I recall in my first year as a beekeeper, I did not receive a single sting. Now, with eight hives and a more cavalier approach to inspecting my hives, I can expect a few accidental stings during a season. But such stings are always the result of my carelessness, and are never a result of aggressive behavior on the part of my bees. It's also interesting to note that with over half a million bees calling my property home, not a single neighbor, friend or family member has ever been stung.

### Where to Situate a Hive

The placement of a hive is not difficult. You needn't have a large parcel of land (I know plenty of beekeepers in Manhattan). The ideal location for a hive would take into consideration the following:

- Place the hive where it will not be a nuisance to neighbors, family or pedestrian traffic.
- Place the hive where access to it is easy (if you are going to remove a hundred pounds of honey, your back will thank you if you have no steep hills to negotiate).
- Place the hive with a water source nearby. Bees use lots of water in the summer to cool the hive. They will find the water they need, but the closer to the hive the better.

Your neighbor won't want them lapping up water from his pool. Provide the bees with their own water source on your property.

- Place the hive where they will enjoy dappled sunlight. Deep shade is not ideal (they need the warmth of the sun to get started in the morning), nor is having the full sun all day long (they waste too much time and energy trying to cool the hive in the hot summer).
- Place the hive so it faces the South East. That will get the bees up and flying with the early morning sun, and warm the hive for most of the day.
- Place the hive where the neighborhood can't see it. Hives can become an attractive nuisance for youngsters, and the source of apprehension for those who are terrified of stinging insects.

### Five Steps to Getting Started

1. Start reading some good books on beekeeping. There is a lot more detail to learn than can be covered in a single magazine article. A good how-to book (or video) is an excellent way to learn the basics.
2. Join a regional bee club. This is also an excellent way to learn more about beekeeping. These clubs often schedule guest speakers at their meeting who are experts in various aspects of bees and beekeeping.
3. Latch onto a mentor. There's nothing like having an expert to answer your questions and show you the ropes.
4. Order an all-inclusive start-up kit and a package of bees from a reputable dealer. Good dealers can often serve as your mentor, offering plenty of support by phone and email. Be sure to checkout [www.bee-commerce.com](http://www.bee-commerce.com), as this online company has been designed to meet the needs of the back yard beekeeper.
5. Assemble your hive, install your bees, and begin your remarkable and rewarding adventure in beekeeping.

Yes, I do love my bees. Nothing I have ever done has given me such reward and relaxation. These are remarkable and fascinating little creatures of nature. And just wait until you see what they can do to expand your understanding and appreciation of your garden. You too will see that it *is* possible to love an insect.



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