



# Bees, Beekeeping *and Honey*

BY STAFF OF ACS DISTANCE EDUCATION

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# CREDITS

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# CHAPTER 1 SCOPE AND NATURE OF BEES AND BEEKEEPING

*Bees occur all over the world and honey has been farmed from bees for thousands of years. To most people, a bee is thought of as something that lives in a hive, produces honey and can sting you. In reality this only describes some bees; many people also confuse bees with other insects such as wasps and hornets.*



Bee collects pollen

There are many thousands of different species, but most of the honey used by man has come from only two species:

1. The Honey Bee (*Apis mellifera*) and
2. The Asian Honey Bee (*Apis cerana*) (also called the Oriental Honeybee)
  - ◆ **Bumble bees** - most people are also familiar with the bumblebee,

which like honeybees can be important for pollinating plants, and also makes honey. Bumblebees however live in much smaller nests of only a few hundred individuals, built in the ground and dying die off over in cold winter conditions. Bumblebees don't produce sufficient amounts of honey to be farmed.

- ◆ **Solitary bees** - Many bee species don't live in (even small) colonies (i.e. solitary bees); nesting individually even when large numbers inhabit a particular locality. Solitary bees create nests by typically tunnelling into loose earth, crumbling masonry or anywhere else that they can find or create a small dark cavity. A single bee will collect nectar and pollen, just like a honey bee, but only produce a few offspring each year. Most are smaller than honey bees, bee like in appearance, and rarely aggressive unless aggravated.
- ◆ **Wasps** are social insects that build nests either in the ground, or on things above the ground, such as walls, trees or fences. They are mostly aggressive and can give a nasty sting. If you get too close to or disturb a nest, they will generally attack. Wasp stings are often mistaken for bee stings.
- ◆ **Hornets** are simply a type of wasp, in fact the largest of the wasps. European hornets eat insects, and will raid a bee hive and eat bees.



Most fruit, vegetables and grains need bees for cross polination

## Significance of Bees

Because bees play a vital role in pollination of crops, it's important to improve diversity of bee populations and ensure there are enough of them to withstand any future threats. Besides pollination, bees provide us with wonderful natural honey too and for many people this is their main reason for keeping bees.

Bee populations are in decline in many parts of the world and this has prompted a lot of good-natured people to build new homes for our fuzzy friends. Various pest and disease problems have impacted on bee populations at different times and in different places. In the 21<sup>st</sup> century, the Varroa mite and colony collapse disorder have become major killers of bees across most of the world; some countries for example,



Australia (as of 2016), have as yet not been affected; but it is more than likely that those problems will eventually extend everywhere.

Bees are not just rural dwellers they can be kept in hives on balconies, rooftops and in city gardens. Keeping bees for honey actually works well on a small scale because overcrowding of populations is completely unnatural – like it is for most species. Honey bees which are mass farmed are more susceptible to disease and parasites.

In order to keep them in good health, it's important to develop an understanding of how the colony works as a complete living entity and how it interacts with the environment including other living organisms.



Bee Hotels attract solitary bees which can help pollination

## Legal Restrictions

There may be legal restrictions in some places that control the keeping of bees. Hives need to be registered in some jurisdictions. For example, all beehives in Australia need to be registered. Contact your local Department of Agriculture and Fisheries, or Primary Industries for details. In the UK you do not need a license to keep bees but other restrictions do apply such as where you may keep bees, how close to your neighbours and mandatory notification of some pests and disease problems.

In Australia it is a legal requirement to have combs on frames which can be easily removed for inspection.

In the USA laws and regulations change according to state – in some states you can keep beehives on a property of an acre in other states it is 5 acres. In most states the hives need to be registered.

- The amount of hives you can keep on any one property also varies according to where you live.
- Some pest and disease infestations are notifiable – you should know which diseases or pests are notifiable in your region; contact your local authority to see what you need to do should you observe a disease in your hive.
- The movement of diseased hives is also restricted in many countries – again check with your local authorities.
- Other legal requirements are placement of hives (they must be a certain distance away from neighbours' boundary lines and houses).



- Colonies may need to be kept in moveable frames at all times.
  - In some areas colonies will have to be re-queened if the hive swarms.
  - The collection of swarms from private properties other than yours.
  - The ownership of a swarm.
  - Laws relating to the processing and sale of honey should also be well-understood – these usually fall under the food and drugs laws of your region.
- It is a good idea to become a member of a Beekeepers Association in your region – they usually offer public liability insurance (such as 3<sup>rd</sup> party risk and product liability) with membership.



Bee hive in garden full of flowers.