



beekeeping



what is it?

It's the art and craft of looking after the honey bee, *Apis mellifera* - highly social insects, living in extremely well-organised groups; each bee has a specific job, and can't survive without the colony. Beekeepers provide hives for colonies to live in. A hive has one queen who lays eggs in the brood chambers; c. 15% drones, whose sole purpose is to fertilise the queen; the rest are workers, who forage for nectar & pollen, make cells, fill them with honey, tend to the larvae and guard the hive.

History: pre-beekeeping, wild bees lived mainly in hollow trees, and humans would steal their honey when they found it. In nature, bees build comb from the top of the tree cavity, downwards, with a curved bottom. They build different-sized cells for different kinds of bees, with larger queen cells hanging from the bottom of the comb. The earliest evidence we have of keeping bees for honey is in Egypt, at least 4400 years ago. In the 19th century, removable frames were invented, so hives could be inspected / honey removed easily.

Bees in decline: bee numbers haven't been monitored everywhere, but where they have, it doesn't look good. See our website for figures. There has been growth in, for example, China and Argentina, due to an increase in the number of people keeping bees – but the big losses are in countries with the most industrialised agricultural systems and the highest use of pesticides. The threat to bees isn't a trivial matter. They're one of nature's most important pollinators, and a decline in bees could mean a decline in agricultural productivity and of nature generally. Damage bee populations and we damage ourselves.

Different approaches to beekeeping: there's a spectrum, from 'natural' (represented by the Natural Beekeeping Trust) to 'conventional' (represented by the British Beekeepers Association). Towards the end of the 20th century, when bee decline was noticed, groups of



Bees on natural comb.

beekeepers began to be critical of practices that forced bees to live differently than they would if left alone. Their position was that artificial practices put the bees under stress at a time when they were faced with a massive increase in pesticides and a decrease in wild forage plants.

Hives: conventional hives have frames with wax or plastic foundation for cells. Natural hives don't provide foundation – just a 'top bar' to build comb from (downwards). In the wild, bees line their hollow with propolis, to inhibit fungal and bacterial growth. Conventional beekeepers don't like it, because it gums up the hive when they're trying to remove frames etc. 'Naturals' are cool with it.

Disease & pest control: treatments range from none at all at the natural end of the spectrum, through mild treatments with, for example, essential oils, to prophylactic use of synthetic insecticides / miticides at the conventional end. Survival rates are as good without treatment - the approach is to allow the bees to build their own defences against diseases and pests.

Reproduction / breeding: bee colonies reproduce naturally by swarming. Conventional beekeepers prevent swarming via weekly inspections, cutting the queen's wings off and destroying new queen cells; they also practise selective breeding that restricts the gene pool, which may be a factor in colony decline in the US. Conventional beekeepers provide foundation impressed with a pattern so that the bees are forced to build worker cells, not drone cells, because workers produce honey and drones don't. Natural beekeepers say that drones play a role in a healthy colony and don't reduce honey production.

Honey: conventional beekeepers tend to feed bees sugar over winter, after harvesting the store of honey that the bees have built up. Natural beekeepers don't feed, as they let the bees eat their own honey, which is much better for them. Only genuine excess is harvested.



Swarm hanging from a branch.



Natural comb in a top bar hive, showing the curved bottom edge.

what are the benefits?

- More people keeping a small colony at the bottom of their garden means more bees
- 80% of fruit tree pollination is by bees; we need to look after our pollinators
- Bee products can provide local, natural alternatives to many environmentally-damaging synthetic products
- Bees can provide the sweetness we crave in the form of honey, without the need for costly and polluting transport and refining of sugar
- Apitherapy is the use of bee products to treat ailments, boost the immune system and promote healthy tissue growth
- Beeswax has a lot of different uses
- Bee products can be used when making soaps and skin-care products

what can I do?

First, work out where you are on the natural / conventional spectrum. Our position is that surely we don't want to risk our main pollinators by using insecticides on them or decreasing the size of their gene pool – especially as there's mounting evidence showing that treatment doesn't necessarily produce better results. And maybe we can agree that honey production purely for commercial reasons is wrong? We think that, ultimately, any activity should be up for discussion if evidence shows that it damages bees. We hope that new beekeepers may choose a more bee-friendly approach, and that existing beekeepers may move in that direction to some extent.

Getting started: if you do take the step into beekeeping, you'll be entering an entrancing world that is too complicated to go into any great detail here, but once you've decided where you are on the conventional-natural spectrum, what kind of hive and how many bees you want, get some training, read, get a hive, get your bees, and away you go. Get your bees by putting your name on a swarm list, baiting your hive or buying a nucleus of bees from as local a source as possible.

You don't need to register anywhere to keep bees, and as long as you apply common sense when locating your hive(s), you won't cause a nuisance to neighbours.

We saw above that bees like to build comb from the top. This inclination means that a mesh can be placed at the top of the hive, and 'supers' (boxes) can be added to the top, so that bees pass through the mesh to make honey in the comb above. Because the mesh is too small for the queen to pass through, the honey in the 'super' can be harvested by the beekeeper, because it contains no eggs or larvae.

You can keep bees in urban areas, if you have a small garden, or even a rooftop space to site a hive. The bees will thrive on the abundant flowers in urban gardens and their flight path will be well above human heads.

If beekeeping really isn't the thing for you, you can still support local beekeepers, by buying honey and bee products; and you can help bees too, by planting bee-friendly plants, and most importantly, not using pesticides or poisons in your garden.

resources

- see lowimpact.org/beekeeping for lots more information (including hive-building), advice, equipment, courses & books, including:
 - Michael Bush, *the Practical Beekeeper*
 - Christy Hemenway, *the Thinking Beekeeper*
 - Luke Dixon, *Keeping Bees in Towns & Cities*
 - E. Readicker-Henderson, *a Short History of the Honey Bee*
- bees-decline.org - Greenpeace report on bee decline
- naturalbeekeepingtrust.org - Natural Beekeeping Trust
- bbka.org.uk - British Beekeepers Association
- bushfarms.com/bees.htm - lots of useful information
- friendsofthebees.org - Friends of the Bees

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