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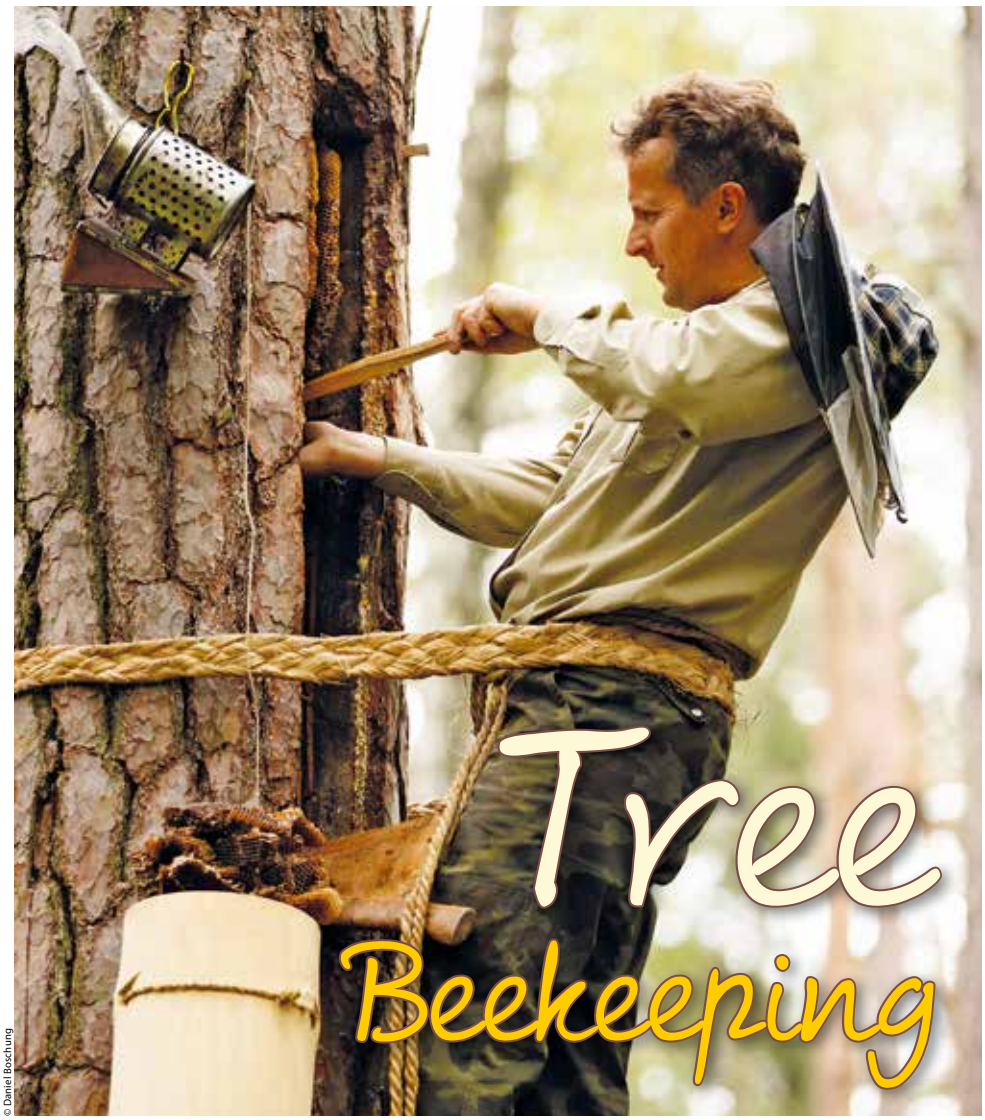

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Tree Beekeeping

Reviving a lost tradition

Jonathan Powell explores the ancient practice of tree beekeeping, a low intervention form of beekeeping using a living tree

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Growing numbers of people are seeking ways to support the honeybee and their innate preferences. The focus for many such beekeepers is not primarily the exploitation of bees for honey, but the survival and health of the species, appreciation of their role as pollinators for much of our food, and perhaps just the joy of living with bees. This article explores the ancient practice of tree beekeeping – a low intervention form of beekeeping using a living tree.

Above: **Extracting honeycomb from a tree hive.**

Top left: **Accessing the hive using traditional tools and techniques.**

Left: **Opened hive showing the bees and comb.**

Research of wild bees has shown that they prefer nests that are located high above the ground and well-spaced from other hives. This protects the hive from predators, the cold and humidity of the ground, and reduces the spread of diseases between colonies.

The preference of honey bees for high locations is not a newly discovered wisdom. In eastern Europe, there is an


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***Above*: Tamga mark indicating the presence of a hive up the tree.**

***Left*: Partially completed hive entrance (without plug) – note thickness of the wall.**

***Below*: Structure created inside hive to support the combs.**


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ancient tradition based on this knowledge. Tree hive bee-keeping is a 1,000 year old practice of keeping bees in slots, cut high above the ground into living pine, lime and oak trees, akin to the natural homes of bees.

In a Polish census from 1827, over 70,000 tree hives were recorded. The tree beekeepers would tend the meadows for the land owners in return for use of the trees. The Polish tree hive tradition was all but lost in the 1930s, but in 2002 Dr Hartmut Jungius of the World Wide Fund for Nature (WWF) discovered tree beekeeping still being practiced in the Southern Urals of Bashkortostan, Russia, while setting up a 22,000 hectare (54,400 acre) woodland nature reserve. Over 700 hives can be found, of which 30% are naturally populated by swarms and managed by the Bashkir.

Traditionally, the Bashkir select pine trees that are older than 150 years. The trees are marked with a unique family mark called a Tamga, which is cut into the bark at the base of the tree. The crown of the tree is removed so that the tree grows in girth. After 70 years, the third generation of Bashkir cut the slot, about 4-5m (13-16.5ft) from the ground. Ideally the pine needs to be at least 80cm (30in) in diameter. The family line will then manage the hive for 200-300 years. The tree is not harmed; indeed it is believed that the tree is invigorated by the wound.

In the Bashkir hive management system, the top one third of the hive is respected and always left undisturbed for raising brood and winter stores. If there is any spare honey it is harvested from the bottom two thirds of the hive. Typically 10-15kg (22-33lb) is harvested in a normal year.

The Bashkir open the hives just twice a year: once in

spring to check if the hive is populated, and then in autumn for the honey harvest. This infrequent opening maintains the medicinal hive atmosphere. The hives are not treated for mites with acid washes or pesticides, as frequently practised in the West, and yet remain healthy. Interestingly, many beekeepers, often referred to as Natural Beekeepers, are similarly discovering that bees will adjust to mites and diseases. They can only do so if they are left to manage themselves, i.e. they are rarely disturbed, their winter honey stores are left intact, and they are not fed sugar, which weakens the bees' immunity.

The hives naturally populate at a density of three hives per 1km^2 (0.4mi^2), thus reducing the problem of disease spread whilst matching forage level to bee density. In this system weak colonies fail and only strong colonies propagate their genetics. Tree hives being static allow bees to build long term bonds and connections between the environment and other colonies.

Construction of the Bashkir hives start with a slot that forms the 'human entrance' to

the hive; it is typically 1m (39in) long and 12cm (4in) wide. The internal diameter of the hive is around 35cm (14in) and has a volume of approximately 90 litres (20 gallons). This leaves thick walls of at least 5cm (2in) to insulate the hive. A slot door of similar thickness and with insulating foliage completes the hive.

The traditional tools for hollowing out the hive include hand forged adze, round scorp and heavy duty chisel/lever. A carving axe is used to make the internal components and this also doubles as a hive tool. More recently the Bashkir also use chainsaws. The process takes about two days.

After 1,000 years the Bashkir have developed a relationship with the bees which supports their innate preferences, and the bees have rewarded their guardians.

Contrast the Bashkir way to 100 years of modern bee-keeping, which has presided over the worst period of bee health since the last major threat to bees, at the time of the dinosaur extinction.

In a modern apiary thin walled hives are densely grouped together, and potentially diseased combs and boxes are routinely moved between hives. Colonies are often subjected to genetic manipulation by beekeepers using artificially inseminated queens or mixed with imported bee strains not suitable for the local climate.

***Left*: Creating a log hive using traditional and modern hand tools.**

***Right*: Hollowing out with a scooped adze.**

***Below*: Modern hives are often constructed with the skilful use of chainsaws.**

Log Hives

Not everybody has a forest with trees of 80cm (30in) diameter in their back garden, so alternatively, a log of 60cm (24in) girth and 1.4m (55in) length can be used and suspended in a tree, elevated on a platform or even kept in traditional style apiaries (but this starts moving away from the preference of the bee).

Log hives have been used for thousands of years; the earliest recorded log hive was found in Switzerland and dated to 3,380 BC. Log hives can use the same construction method as tree hives, although many alternative hollowing techniques are possible, including:

- Burning a pre-drilled log core above a fire using a metal sheet with a hole to concentrate the fire to the centre of the log
- Splitting and gouging the core before joining again
- Drilling and chiselling from both ends

If you fancy having a go at making one, a suitable log can be purchased from a local saw mill for about £60, which is about five times cheaper than a modern frame hive.

Intrusive inspection regularly batters the fragile biosphere. The hive is robbed of winter honey stores which are replaced with immunity weakening sugar or corn syrup. The list of common manipulations fills many books.

With the help of the Bashkirs, Dr Jungius and his WWF colleagues taught tree beekeeping to a dedicated group of Polish beekeepers who now have 50 tree hive trees in Poland. Some are restored original hives. In March 2014 I joined the Polish masters in Switzerland on a course organised by FreeTheBees, where three tree hives were made together with five log hive versions for hanging in the trees. A larger project was completed in a Bavarian habitat forest in October 2014. Additional training courses are planned for Switzerland in 2015 and potentially one in the UK.

The revival of tree hive beekeeping in Poland and other European countries is exciting and hopeful for the honey bee, particularly if honey is not on the agenda. The establishment of large wild bee sanctuaries could be important in restoring the health of the honey bee. But with the catastrophic loss of diverse organic forage in the last 100 years, what is unknown is just how much of Europe can still support wild bees

If you think you can help revive tree beekeeping or want to find out more please contact the author: jonathan@naturalbeekeepingtrust.org

Jonathan supports a peer group of natural beekeepers in Somerset (UK) and often gives talks and training on Natural Beekeeping. He writes at beeswing.net and is a partner to the Natural Bee-keeping Trust. His grandfather kept bees from the 1930s until 1986, passing on his knowledge to Jonathan as a young boy. Jonathan aims to respect the nature of the bee in his beekeeping and is critical of many conventional beekeeping practices that undermine the long term health of the honeybee. He believes that, "Observation and knowledge with an equal measure of compassion is the best way to live with bees and that diverse chemical-free forage is the key to healthy bees."

USEFUL WEBSITES

www.naturalbeekeepingtrust.org

http://beeswing.net

www.FreeTheBees.ch/en

http://culture.ru/en/atlas/object/725

N.B. Some of the chainsaw and climbing techniques shown in this article require specialist training and/or special equipment. Do not attempt to emulate them unless correctly qualified and equipped to do so!

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Top: Comb from a tree hive.

Above: Forest honey and schnapps.

Right: Modern take on a log hive.

Bottom: Traditional log hives.

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