



Clive Hill

A *Bombus hypnorum* drone on soapwort. Note his long antennae

- Thorax: tawny to reddish brown, or darker
- Abdomen: charcoal grey to black
- Tail: white – and this really stands out.

Queens, workers and males (drones) all have a similar colour pattern. Drones are chunky, about twice the size of a honey bee, have blunter ends to their abdomens and noticeably long, curved antennae. Newly hatched drones have a patch of yellowish facial hair, but this wears off with time. Queens vary significantly in size, with a range similar to that of *B. lucorum*. Workers are quite small. Thorax colour is the biggest variable; there are many dark *hypnorum* bees, but they always have a white tail. Partial baldness on the thorax can accentuate the dark appearance. It is one of the first bumblebee species seen in the spring. In nature it is a 'woodland

INTRODUCING THE TREE BUMBLEBEE

Bombus hypnorum

Clive Hill

The 'Tree Bumblebee', *Bombus hypnorum*, is a recent addition to the UK fauna. Despite this, it will already be familiar to many beekeepers in England and Wales, since it can be the cause of phone calls – 'Help, there's a bee swarm in my bird-box!'

Beekeepers need to know about this new arrival and be aware that it can show strongly defensive behaviour – more than many other bumblebee species. If you are called to deal with a nest, you must make sure you don't put members of the public in danger. Disturbing the colony can provoke a rapid and unexpected reaction. Moving

a colony must be planned and undertaken when the bees have stopped flying for the day. There are certain situations where removal is not the best option and it is preferable to leave the colony left to complete its annual life cycle and die out naturally.

Distribution

B. hypnorum has a natural distribution in mainland Europe, through Asia and up to the Arctic Circle. It was first found in the UK in 2001, in Wiltshire, and must have arrived from the Continent.

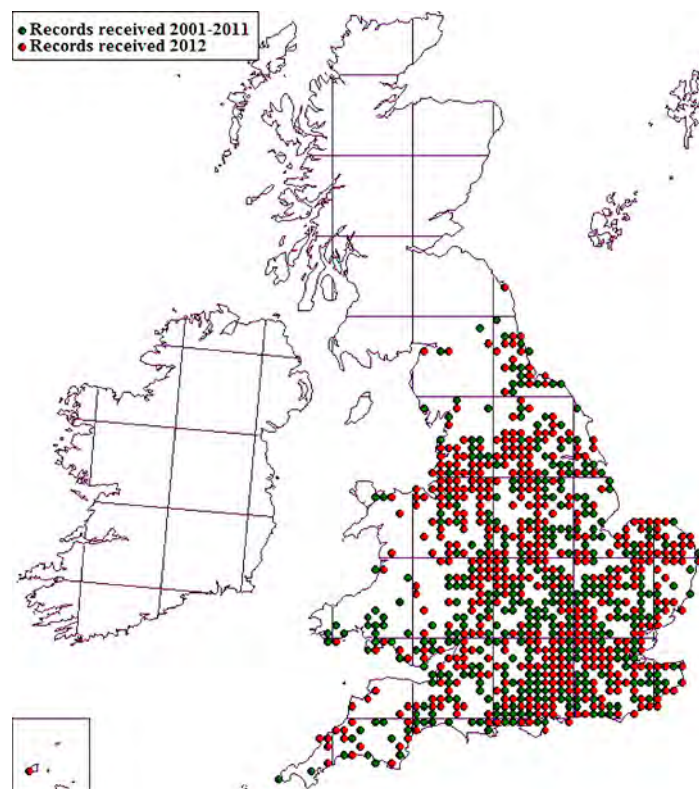
It has spread rapidly and is now found over most of England and much of Wales but has not yet been recorded in Scotland, although it has already been found in Carlisle. It can be very common in late spring to early summer. Much of its rapid spread is probably due to its habit of nesting in bird boxes, which abound in the UK.

The Bees, Wasps and Ants Recording Society (BWARS; www.bwars.com) has been busy

monitoring its spread (see the map below).

Recognition

The common bumblebees can be identified from the colour patterns (banding) of their hair. *B. hypnorum*'s banding is unique amongst the UK species.



Look out for this 'new' bumblebee in the spring



Bombus hypnorum always has a white tail. It can show a bald patch on the thorax

edge' species but in our human-dominated ecology, it is associated with man-made structures. Like all bumblebees the queens do 'nest-searching flights' in March and April, looking for somewhere snug to set up home. These flights are often along vertical surfaces which is unusual amongst bumblebees. I've seen them search along fences, house walls at gutter level, around the eaves and at bird box entrances.

The species is most likely to be seen from early spring until June, but it sometimes occurs later in the year. Amongst the many flowers they visit are willow, blackcurrant, gooseberry, apple, chives, rose and snowberry. The bees are highly active and agile and are rapid and effective pollinators of raspberry, cotoneaster and comfrey.

Colony Location

Colonies are usually located well above ground level. Bird boxes containing old bird nests

are commonly used while other locations are holes in trees and places high up in buildings, such as soffit boxes, under roof tiles or house eaves. Quite often there will be yellow splotches of bee faeces on the front of the box which can be a useful indicator of its use by *B. hypnorum*. Some nests are closer to the ground, but this is uncommon. Queens have even nested in accumulations of fluff in tumble drier vent pipes!

Once she has established her nest, it will be around six weeks before the workers take over the foraging. The smaller workers stay at home and become 'house bees'; the larger ones forage for the colony. A really strong colony can build up to 300–400 bees but most are likely to be smaller. A colony can live for four to five months before dying out naturally. Colonies often die out early because they have been attacked by caterpillars of the wax moth *Aphomia sociella*.

At the end of the cycle, strong colonies will rear 'reproductives' – virgin queens and/or drones. Drones leave the colony and never return, living a self-sufficient life for many weeks while foraging for themselves and looking for opportunities to mate. Virgin queens will mate, build up in-body food reserves, then find somewhere to hibernate until the following year. A few queens start second-cycle colonies which continue into the autumn.

Flight Activity

Three traits of *B. hypnorum* can cause worried calls to beekeeping association helplines:

- nests are frequently established in bird boxes, or in parts of buildings
- there is an apparent high level of nest flight activity because of 'nest surveillance' by drones
- the bees have a rapid reaction and defensive behaviour when a nest suffers vibration.

These traits are of more significance in the UK because people tend to put bird boxes close to their homes! Colonies can cause a significant workload for beekeepers: our swarm-line has had 40 calls a day at busy times. Interestingly, in mainland Europe and Asia, where *B. hypnorum* is an ordinary bee-fauna member, the human population appears not to have so many problems with the species but I believe the provision of bird boxes is significantly less in these countries than in the UK.

Colony Flight Activity

Bumblebee colony flight activity is very different from that of honey bees. In the early stages you get one forager flight every few minutes which is hardly noticeable. It can be two months after the nest is established before flights become noticed and once drones are about, their nest surveillance flights greatly increase the apparent activity at a nest.

Nest Surveillance Flights

These look like an 'aerial dance' with a cloud of bees close to the nest's entrance. This catches the eye, draws

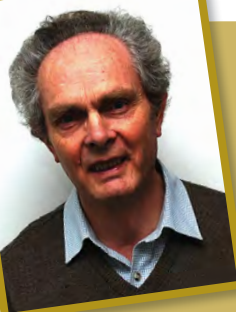
attention to the colony and can cause public concern. To an untutored eye, it looks like honey bee colony flight, but honey bees wouldn't generally choose a bird box (it's too small) and the bees look too big. The behaviour, known technically as nest surveillance, is a mating-preparation characteristic of *B. hypnorum*. The bees are drones which are noticeably furry and have white tails – take a photo and have a look.

This activity happens mainly in May/June, can occur over most daylight hours and may last several weeks. There might be one bee doing it, or 20+. Warm temperatures and sunshine increase the number of bees; cool damp weather, or rain, reduces numbers. Activity stops at dusk and starts a bit after dawn. Bees also join/leave the cloud as they move from nest to nest: they are probably following a 'patrol route'.

If you look at slow-motion film of the activity, the drones are facing towards the nest. When such 'dancing' is going on, a few bees fly directly to/from the colony straight through the cloud. These are workers which are usually smaller than the drones. Occasionally drones dart towards each other and fall out of the air with an audible bang – erroneous mating activity! Finally, if the colony has produced virgin queens, when these fly, drones attempt to mate. It looks like fighting. Paired bees fall to the ground, where they can remain coupled for a considerable time.

Defensive Behaviour

Defensive behaviour is seen if the nest is knocked or vibrated and the colony is strong enough to defend itself. The bees react strongly to the vibration and can sting people nearby. Examples



A beekeeper for 39 years, Clive Hill is now President of High Wycombe Beekeepers' Association. Captivated by bumblebees for ten years, he has relocated colonies from bird boxes, in/under sheds, underground ... and even a tumble drier! An active Bumblebee Conservation Trust member and contributor to their Forum, he encourages beekeepers to 'widen their horizons' by interacting with BBCT.



are opening a shed door, or tasks where knocks and bangs vibrate the structure, such as carpentry or plant potting work. In bad cases, the bees can boil out of the nest which is highly intimidating, especially if you hadn't realised the colony was there!

Beekeeper Help

Discussing and solving issues with *B. hypnorum* can get you 'brownie points' and grateful financial donations for your Beekeepers' Association. If your association is a Registered Charity, try to get donations Gift Aided. This is how I approach such situations:

- Bees boiling out, particularly if someone has been stung – take the nest away (see below)
- Drone clouds – educate the caller to enjoy the spectacle and feel honoured to be a Bee Landlord. Unless they fiddle with the nest, they should be perfectly safe.

Moving Colonies in a Nest Box

Wait for any flying bees to return home by late dusk; they fly noticeably later than honey bees.

Work in the dark wearing bee gear. Beware, you might get stung, but bumblebee stings are un-barbed, so you only get a small dose of venom.

Use red light from a cycle rear-light so you can see what you

are doing, but the bees (who don't see red) can't.

Quickly stop up the nest-box entrance. (I use a roll of Scotchbrite scouring pad which is very air-porous, but flexible foam would do.)

Lift the box from its hook or position. Check for, and quickly tape over, any gaps bees could get through. Keep the box upright.

Now there are two options:

- 1 Relocation close by.
- 2 Move the nest completely away from the area.

Relocation close by

Place the nest box onto a stable surface close to its original location (say 1–2 metres). The following day, remove the bung quickly to release the bees and retire to a safe distance. They will re-orientate and shutting them in for a few hours will have helped them realise they are in a different location.

Moving totally away

Keep the box upright and somewhere cool and dark overnight, with the bees shut in. The following day, fix the box to a firm surface not liable to vibration, and ideally a mile or more from the original location (your garden?), to prevent returning bees. Remove the bung and release the bees which will re-orientate.

At the original location, a few bees which have camped out overnight might return to find their home gone, but these will soon disappear. At its new

A colony in the fluff accumulation in a tumble drier vent pipe



location, the colony can be a fascinating learning opportunity!

Tumble Drier Colonies

There have been several such cases in the UK. You see bees entering the vent pipe grill. The nest will be in a vent pipe side arm which is filled with fluff. It can be moved but this is very time consuming, so such colonies are probably best left to reach full cycle and die out naturally. I would be most grateful if you could let myself (clivehill25@gmail.com) or the Bumblebee Conservation Trust (bumblebeeconservation.org) know about such cases: we want to find out how common this is.

I hope you find our new bumblebee interesting and a good source of income for your Association. My personal experience is that relocating colonies to my garden has been

a source of much satisfaction and extension to my bee knowledge. ☐

Notes

The Bumblebee Conservation Trust website (www.bumblebeeconservation.org) has a wealth of information. Select 'About Bees'/'FAQs' for useful information about relocating colonies. There is extra know-how in the BBCT Forum, in the 'Get Involved' section of the website. Videos about the Tree Bumblebee are on YouTube. Search for: Bumblebee Trust, Tree Bumblebee, *Bombus hypnorum*.

My thanks to BWARS for the map. For identification and mapping information, see their website: <http://www.bwars.com/>

A very useful book is *Bumblebees* (3rd Edition) by Prys-Jones & Corbet. ISBN 978-1-907807-06-0.



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