

# Leiston Beekeepers' Newsletter

Issue January - March 2015

Editor. Laurie Wiseman

## **Beekeeping Class - For New Beekeepers**

**Wednesday 11 & 18 February 4 March & ? May**

United Reform Church

**6:00pm until 8:30pm**

Chapel Road, Saxmundham IP17 1BH

(Cost to be decided - Tutor David Burns - contact [pjr@pennyrobertson.plus.com](mailto:pjr@pennyrobertson.plus.com))

## **Leiston & District Bee Keepers' Association Annual General Meeting**

United Reform Church

**2:30pm**

Chapel Road, Saxmundham IP17 1BH

**Saturday 14<sup>th</sup> February 2015**

## **Suffolk Beekeepers' Association Annual General Meeting**

Martlesham Community Hall

**7:30pm**

Felixstowe Road, Suffolk IP12 4PB

**Wednesday 4<sup>th</sup> March 2015**

## **Small Hive Beetle found in Europe!!**

On 11<sup>th</sup> September 2014 the presence of the small hive beetle was found in hives in Italy. These beetles can destroy a colony of bees if left uncontrolled. Since the discovery, urgent measures have been undertaken to eradicate and control its spread. There have been substantial levels of imports of package bees from Italy to the UK. There are 'sentinel apiaries' containing bait hives at vulnerable points (ports) in England. We should be aware of the danger of small hive beetle. If you think you have seen this beetle contact the Bee Inspector immediately.



Small Hive Beetle



Small Hive Beetle on Comb



Small Hive Beetle larvae on Comb

## **Propolis - Why do the bees collect it?**

How does a colony of 50,000 bees crowded into a hive at temperatures of 35 Deg C and high humidity levels - perfect conditions for the growing of bacteria and the spreading of disease - manage to survive? Bees use propolis to protect themselves. Bees collect propolis from trees and sticky buds. It is a resinous, sticky, gummy, brown, malty substance that is full of medicinal properties. It is difficult stuff for the bees to deal with and they take a lot of time doing this: it is carried back to the hive on the bees' hind legs. They then polish every cell in the brood area with this propolis. They are using its sterilising and anti-bacterial properties to make a healthy environment in which to live and grow in.

## **Constituents of Propolis**

Propolis contains approximately 55% resinous compounds and balms, 30% beeswax, 10% aromatic essential oils, and 5% pollen. It is rich in vitamins, amino acids, trace elements and bioflavonoids. Studies have shown that propolis is antimicrobial, antibacterial, antiviral, antiseptic and antifungal and is an antioxidant.

## **Propolis as a building material**

Autumn is the time when the bees bring in the sticky propolis to prepare the hive for winter by doing all the repair jobs around the hive. They fill any gap that is smaller than a 'bee space' stick the combs together and fill in any draughty holes. It's a difficult and messy time for beekeepers.

## **Propolis in history**

It is believed that Hippocrates prescribed the use of propolis to help heal sores and ulcers, internally and externally. Bacteria cannot build a tolerance to it. The writings of Aristotle and Pliny describe the healing properties of propolis for suppurating wounds, abscesses, and boils. It is reputed that Aristotle named propolis; from the Greek 'pro' meaning 'before' and 'polis' meaning city - 'before the city' or 'defender of the city'. During the Boer War it was used along with honey to treat soldier's wounds and today the NHS uses honey dressings for the treatment of wounds. Propolis is known to have a stimulating effect on tissue growth, anti-inflammatory properties and a positive influence on the immune system.

*(Editor: I melt 250g of propolis in 1 litre of gin for 12 days then filter and bottle it. I take a teaspoon a day on my muesli to strengthen the immune system. If it is good for the bees it must be good for me!)*

**Did you know?** The Telegraph 1<sup>st</sup> July 2014

**There was more honey labeled as Manuka on UK shelves than was produced in a single year.**

## The Winter Cluster - How the Cluster Survives

Like all insects, the honey bee is cold-blooded (exothermic). However, unlike other insects, the honey bee does not die off or hibernate, but is active all winter eating honey to keep warm. With the onset of winter the bees congregate in a cluster shivering their flight muscles to generate enough heat to keep the colony warm and survive the winter.

### The Winter Bee

The winter bees are produced at the end of the summer. They are physiologically different to the summer bee, with a high level of protein and fat bodies, which store carbohydrate, protein and fat. This store is the nourishment that helps carry the bees through the winter months. The winter bees will live much longer (4 to 6 months) than the summer bees, as they do no foraging or brood rearing. Their sole purpose is to get the colony through the winter until the coming spring. In the late autumn the winter bees prepare themselves for the long winter months by consuming large amounts of pollen and honey. The colony will have collected sufficient stores of honey and pollen during the summer months for the winter. The population drops as the summer bees die off and brood production stops. Then winter commences.

### The Cluster

As winter begins the bees form a tight cluster in and around the combs. This cluster expands and contracts as the weather warms and cools so as to maintain itself at just that temperature that keeps it alive. The core of the cluster is about 18 Deg C with the outer mantle at 14 Deg C. The winter cluster forms this well-defined cluster - about 10,000 bees - when the air temperature dips below 10 Deg C. Then as the days begin to lengthen after the winter solstice the queen is fed a little and she begins to lay a few eggs at the centre of the cluster. These eggs have to be kept at 35 Deg C to hatch - see diagram below. There is a need for water at this stage\* as the larva that hatch from this egg laying cannot digest full strength honey and it needs to be diluted. The bees either collect water from outside or from condensation inside the hive walls, and use this to dilute the honey. The winter bees rapidly age from this brood rearing and by early spring all will have died but will have been replaced by this early brood.

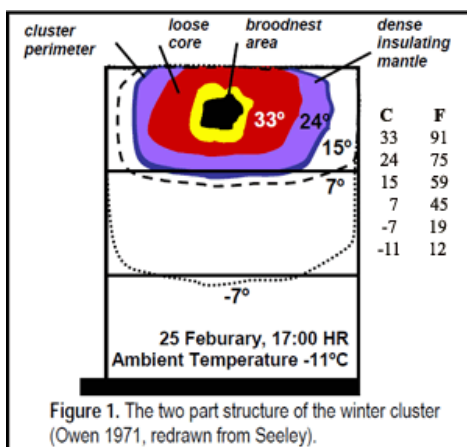
(\* It is a good idea to have a water supply near the hives at this time where the bees can safely land and easily get the water.)

### Toilet time for the Cluster

A cloud of bees seen milling around the hives in winter is reminiscent of a warm day in July. There is nothing like a warm day in mid-winter to help protect a colony against dysentery. Dysentery in the bees is caused by an excess amount of faecal material in the bee's gut. (Editor - *Nosema* also causes dysentery-like symptoms. *Nosema* is a fungus that lives in the honey bee gut. The infected bees are unable to properly digest their food, which causes diarrhoea and distended abdomens. Symptoms usually show up in late winter or early spring after long periods of confinement and the affected bees defecate on the combs.) The winter bee can hold about 30-40% of faecal matter. That is about two months worth of faeces! So whenever the outside temperature is above 10 Deg C bees take the opportunity for an 'evacuation flight' and will mill around the hives.

(Editor - You should not feed the bees with sugar syrup in Feb/March as it is can be absorbed into the faeces and take the amount of faecal matter over 30-40% causing dysentery in the bees. If you have to feed the bees use baker's fondant.)

### The Mantle



The outer mantle layer of bees - see diagram - serves as insulation for the inner bees. The mantle bees maintain a temperature that allows them to move about and remain attached to the cluster. If the thorax of the mantle bees, cools below 9 Deg C they are no longer able to activate their flight muscles for heating, fall into a chill coma, and fall off the cluster. At the beginning of winter the cluster is at the bottom of the combs in the hive. The cluster slowly moves upwards and sideways to reach new areas of honey, they never move down. The cluster keeps itself warm by some of the bees at the centre of the cluster eating a little of the stored honey or fuel store. This honey or fuel is used to drive the shivering of the bees' wing muscles that heats the bees' thorax. This heat then slowly radiates through the cluster keeping it warm. However, if the outside temperature drops too low the bees can die from starvation even though there are sufficient stores of honey available as they are unable to move.

### Winter ventilation

During the winter, honey bees consume honey to generate heat and warm themselves. The warm moist air that results rises from the cluster hitting the cold inner walls of the hive causing condensation. To avoid any problems with this condensation dripping on the bees the hive should have sufficient ventilation to keep it dry.

See infrared photograph of winter hives: [bee hives in infrared](#)