**THE QUEEN EXCLUDER**

At its simplest, a Queen excluder is a mesh divider between the brood chamber and the honey super(s) in a hive - the mesh size (~4 to 5mm) is such that the workers can squeeze through but the wider abdomen Queen cannot. The purpose of the Queen excluder might seem obvious, being to constrain the Queen from moving into and laying brood in the honey storage areas, although when and where the excluder is placed should take account of the colony’s natural brood raising and its honey storage characteristics.

**COLONY NEST:** Inside the nest the bees behave cooperatively to form a sphere-like cluster maintaining the homeostatic brood area temperature of between 34° to 35°C in the innermost zone – generally, the Queen inhabits and lays only in this inner zone. Food stores are kept nearby the brood with the proteinaceous pollen stores forming an intermediate shell and then, furthest out, are located the honey storage cells. For a framed hive, such as the Standard British National, each frame of the deeper brood chamber comprises a vertical slice through the cluster reflecting the brood-pollen-honey distribution. For reasons not fully understood, the bees seem to prefer to locate the brood nearer the entrance so, for the British National hive, the mid-season brood area is bottom-flattened, occupying the lower section (ie the brood chamber) with the honey storage offset in the higher super(s) section.²

Thus in a well-managed frame hive the honey division is natural and the introduction of the Queen excluder simply reinforces the natural segregation between brood and honey stores. In other words, once that the colony has established its mid-season segregation pattern there is unlikely to be any need to confine the Queen to the brood area because the bees will manage this themselves. Imposing the presence of a Queen excluder runs counter to the natural instinct of the colony and, moreover, it defines the maximum size of the brood rearing area that will change over the season. If this is too small, then the colony itself is likely to limit the number of foragers being raised and, hence, the honey yield might be suppressed.

**REMOVING THE QUEEN EXCLUDER FOR OVERWINTERING:** During the overwintering dwell in activity the cluster tightens and there is tendency for the bees to move the cluster up into the higher regions where it is warmer – an excluder left on the hive will prevent the Queen moving with the cluster so, obviously, any fitted excluder should be removed in late-Summer before the overwintering period.

**DOING WITHOUT THE QUEEN EXCLUDER:** Many experienced beekeepers do not consider the Queen excluder to be at all necessary because of the natural inclination of the bees to establish the brood-pollen-honey distribution matched to the cluster size and its position at all times in the season. Even though in the early Summer months sometimes an errant Queen might establish long thin vertical brood nest that extends upwards in the hive this can be remedied by shuffling the brood-bearing frames down into the first super above the brood chamber, taking care not to build up an unsymmetrical or overly widened brood area that extends beyond the perimeter of the cluster.
Another ruse to control the brood distribution is to reduce the hive to a brood chamber and one single super for overwintering, adding to this progressively from April-May with supers in preparation for the first nectar flow – this approach has to be proactive and one step ahead of the Queen’s increase in the rate of egg-laying, thus not encouraging the colony to go to division and swarming because the brood area is too small.

**Fitting the Queen Excluder:** If it is decided to fit a Queen excluder, say for running a 2-Queen hive or temporally to segregate and locate the Queen then take account of the following:-

**When to Fit:** Not before the Queen has recommenced laying and that a good, strong brood pattern has been established.

**Where to Fit:** Above a brood chamber that has at least 4 undrawn frames available for expansion of the brood area or, better still, above a brood plus one super combination.

**Types of Queen Excluder:** Several types of Queen excluder are available:

- **Slotted Plastic:** Cheap but often difficult to unpeel from the hive surfaces when the bees have cemented it down with propolis – tends to finally sharply wrench off the hive disturbing the bees.

- **Metal Slotted:** More durable than its plastic counterpart but claimed to damage and fret away at the wings of bees - also often difficult to unpeel from the hive without disturbing the bees.

- **Wire on Wood Surround:** Best but most expensive option that remains rigid on the hive and probably results in less damage to the bees.

- **DIY Queen Excluder:** Since the Queen mainly occupies the centre of the nest, remaining in the established brood area, providing an adapted cover board with (~12mm) holes or slots arranged around the periphery allows the worker bees to pass through to the higher sections of the hive without offering a direct path to the Queen. However, note that the introduction of this type of excluder could adversely change the natural ventilation of the nest.

To Exclude, or not to Exclude – that is the Question!

John Large

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1. Not to be confused with a *Drone Excluder* where the passing gap size is about 5.4mm.

2. In other hive types where the principal entrance is not at the bottom, for example a top bar hive, the bees store the honey furthest back away from the side entrance.