

Widespread Outbreak of New Form of EFB in Scotland

In early July 2009 disease in the apiaries of a commercial beekeeper in Perthshire was diagnosed as a variant form of European Foulbrood (EFB). This note was drawn up with the encouragement and participation of the beekeeper, an experienced and respected member of the beekeeping community in Scotland.

This variant form of EFB is suspected to have been present in the apiaries of the beekeeper for at least two years. Around 5% of his colonies are infected and the beekeeper is pursuing a policy of burning all affected colonies. Continuing investigations suggest that this disease may be well-established in the apiaries of other beekeepers in the area and, at present, neither the geographical boundaries nor the ultimate origins of the outbreak can be determined. There are currently suspect cases over a broad area of Strathmore, in the Carse of Gowrie and in the Dundee area. It is possible that the disease is as yet unrecognised elsewhere and more widespread. Updates to this note will be published on the SBA website as the current investigations continue.

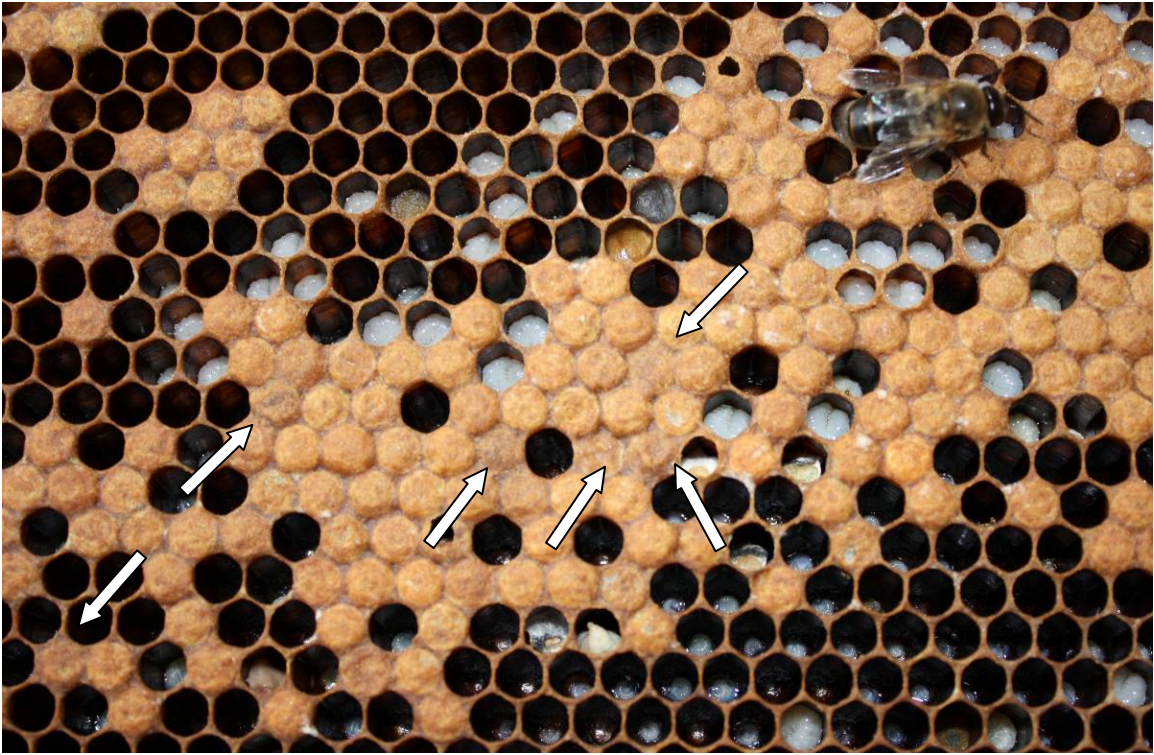
The disease is hard to identify and the affected colonies have been thought until recently to be suffering from Parasitic Mite Syndrome brought on by ineffective treatments for *Varroa*. The beekeeper reporting these problems to the Scottish Government wishes to acknowledge the role of the local bee inspector in identifying the true nature of the infection.

This new type of EFB differs from classic EFB in the following ways:

- primarily sealed brood are affected, although serious cases can have a few unsealed brood cells with visible symptoms
- the lateral flow strip test marketed by Vita returns a negative or very weak positive result
- it occurs in colonies suffering a relatively high mite load

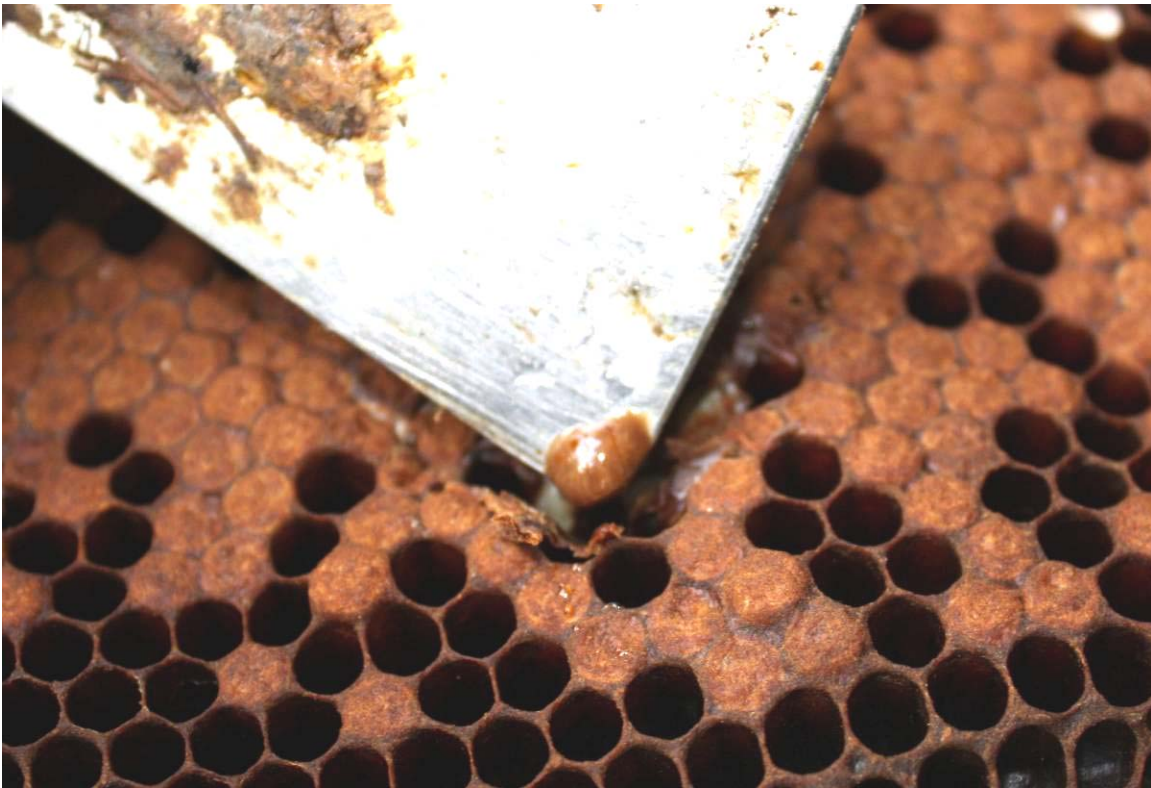
It shares characteristics with classic EFB as follows:

- unpleasant odour is usually but not always present
- soft, pasty, collapsed larval tissue
- lack of ropiness in the matchstick test



Above: a suspect comb with spotty brood, uncapped chalkbrood and discoloured cappings (arrowed) worthy of further investigation.
Below: three suspect cells on the same comb opened for inspection, two with chalkbrood and one and with a pale EFB-infected larva.

Cases are initially identified by selecting frames of mature sealed brood and looking for cappings that differ from the others, particularly those which are slightly darker or irregular in some way. Many of these cells are found to harbour chalkbrood-infected larvae, but a low proportion (as low as one in a hundred in some cases) have larvae which have melted and may be pale or have turned brown. Such decomposing larvae usually but not always have an unpleasant odour which has been compared to rotting fish, and have given a strongly positive EFB result in a laboratory test.



Brown EFB-infected larva removed from a cell with a darkened capping.

Other diseases with which this condition can be confused include American Foulbrood, which has a different odour and melted larvae which will form a string when pulled out with a match, and sac brood virus, which leaves the larva as a soft watery brown object with an intact skin which can often be removed whole.

EFB is a notifiable disease and confirmation of an infected site triggers Standstill Orders and a requirement to investigate all colonies in a 5km radius of the site. Beekeepers across Scotland are encouraged to look for symptoms in their colonies and to report any suspicious finds to the local SGRPID office (see

http://www.scottishbeekeepers.org.uk/contacts/documents/8_Disease_s.pdf) or look under Scottish Government in the local Phone Book) and the SBA Diseases Convener. The Scottish Beekeeping Association runs an insurance scheme which can recompense beekeepers suffering destruction of colonies. Although destruction by burning is the traditional treatment, shook swarm and antibiotic treatment are alternatives that may be offered by the bee inspector.

In this season of moves to the heather and summer apiary visits, beekeepers should carefully investigate their colonies before moving bees. Organisers of apiary visits in affected areas should consider a strategy for biosecurity. The SBA Diseases Convener is willing to offer advice to concerned beekeepers.

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Bee Diseases Convener
Scottish Beekeeping Association