

OBSERVATION OF FEMALE STAG BEETLE *Lucanus cervus* ON A FRESHLY CUT STUMP

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One day in June 2009, while cycling along Maldon Road, Colchester, I noticed that a big false-acacia tree, *Robinia pseudoacacia*, was missing from a front garden, TL986243. Cutting a tree is big news in a stag beetle hotspot, which is where I happen to live, so late



Figure 1: False-acacia stump in a front garden drive, 26 June 2009. Note the darker wood which surrounds the cavity. Photo: Maria Fremlin

one afternoon when returning from our allotment I stopped to take photos, starting with the general aspect, Figure 1. As I approached the stump, camera at the ready, I saw a female stag beetle, *Lucanus cervus*, walking on top of it and then disappearing into a gap in the bark, see Figures 2 & 3. I could not have timed it better - these photos were 5 seconds apart.

This was a most exciting observation because it supports my hypothesis that stag beetle females are very quick to colonise freshly cut stumps (Fremlin, 2009). *L. cervus* in the UK is currently classified as “Nationally Scarce Category B”; it is a saproxylic species. Saproxylic organisms are species which are involved in or dependent

on the process of fungal decay of wood, or on the products of that decay, and which are associated with living as well as dead trees (Alexander, 2008).

Stag beetle females seem to be very opportunistic in their choices judging from the great variety of places where their larvae have been found: stumps, logs, fence posts, woodchips, railway sleepers, compost, horse manure, etc. (Percy et al., 2000; Fremlin, 2006; Smit & Krekels, 2006; Hawes, 2009; Marcos Mendéz, pers. comm.). In our garden TL985244, over the years, I have found their larvae in the compost and leaf-mould piles and also, more recently, in some of the buckets which I buried with wood and woodchips (BB4B) in the vicinity of successfully colonised tree stumps (Fremlin, 2009).

My observation raises a few questions though.

What attracted this female to this stump?

As far as I know no research has been published on this subject for *L. cervus*. However, it is known that both ambrosia and bark beetles are attracted to stressed or dying trees, many



Figure 2: Female stag beetle walking on the top of the stump, 26 June 2009, 18h:48m:52s BST. Note some of the legs are out of focus.
Photo: Maria Fremlin



Figure 3: Female stag beetle going into a crack, 26 June 2009, 18h:48m:57s BST.
Photo: Maria Fremlin

of which have fungal or bacterial infections (Beaver, 1989). This tree had been felled only two months earlier, because it was dying back; indeed it suffered from heartwood-rot, Figure 1. The main heartwood decayer for *R. pseudoacacia* appears to be chicken-of-the-woods *Laetiporus sulphureus*, which causes cuboidal red-rot inside the cavities (Alexander, 2008; Alexander pers. comm.) and *L. sulphureus* fruiting bodies have been associated with stumps where *L. cervus* larvae have been found (Klausnitzer, 1982; pers. observ.).

So this observation isn't that surprising after all.

Back to that healthy female; by the end of June she was presumably seeking a good place to lay some of her eggs. It has been observed during radio-telemetric studies in Germany that a few females went from stump to stump and stayed down about 3 days, thus suggesting that they may not lay all their eggs in one place (Kretschmer, 2007). But as you have probably noticed this particular stump is surrounded by concrete, (Figure 1), admittedly a rather awkward place for a stag beetle nest and this raises another question.

If this stump were successfully colonised would the beetles be able to emerge?

I am asking this because *L. cervus* and *Pseudolucanus barbarossa* are the only European stag beetles that pupate in the soil in the vicinity of the wood in which the larvae have grown (Klausnitzer, 1982; Jeremias & Escolà, 2003). In the case of *L. cervus*, after a protracted larval stage of at least 3 years (Smit & Hendriks, 2005; Rink & Sinsch, 2008) or

more (Harvey & Gange, 2003), pupation occurs in mid-summer at a depth of 30-50 cm and the adults overwinter nearby (Sprecher-Uebersax, 2001). The following May the beetles will emerge through the soil, usually a bit away from the stump. How will they manage it?

It will be a long wait but from now on I shall keep an eye on this stump and also on a couple of other younger false-acacia trees cut soon afterwards in an adjacent garden. Fortunately the

latter are surrounded by grass (Figure 4), so hopefully they will be colonised as well. Interestingly these trees, which originate in the Appalachian Mountains (Mitchell, 1989), grow very well in this area spreading by root-suckers and by self-seeding; most certainly the latter is what has occurred with these examples.

Ending in an optimistic way, cutting trees suits *L. cervus* but it must be done hand-in-hand with replanting to ensure the continuity of its urban success. Ideally a like-for-like tree replacement program in stag beetle favoured areas would be a good conservation policy to follow.

Stag beetles - all they need is love and wood.

Footnote

At the time of going to press, August 2010, there had been 26 *L. cervus* sightings this season in the vicinity of the big stump and none by the other two.

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Figure 4: Two false-acacia stumps in an adjacent garden, 26 June 2009. Note the darkened heartwood.

Photo: Maria Fremlin

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