

Lilioceris lili, the red lily beetle

If you grow lilies or fritillaries you will have this bright lacquered red beetle pest. I first saw lily beetles in my garden about 2014. They were more a curiosity, and after I found and removed the two of them, there was no sign the rest of the year. From then I would occasionally come across them doing no particular damage and delete them on sight. This year was the first time I came across a full scale assault on several lilies, and I earlier witnessed them on lilies on other gardens in the area when those gardens were opened to visitors.



They also supposedly attack; Convallaria majalis, Polygonatum, Solanium, Nicotiana, Alcea and Hosta. I have yet to find them on those plants, but I am vigilant now that I am informed.



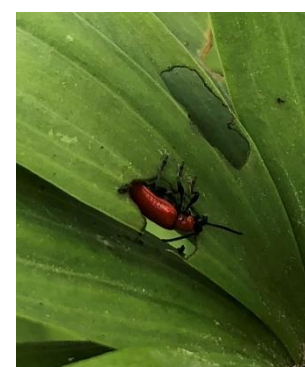
They are here in Ireland now, and we will not be able to get rid of them, they are too widespread. This was the first year of substantial damage to one set of lilies in my garden at Sanabria, so now I am on a war footing with this pest.



Life cycle

Look for them as mature beetles on fritillaries and lilies in March/April as those plants come up from the ground, so even if the plants are six inches high, you will find them. They like lilies as they can shelter in among the whorl of leaves and eat away invisibly, but Frits appear first in our gardens.

They also mature quickly and begin egg laying underneath leaves on the fritillaries and lilies very early on. This means that it is possible to have two cycles and maybe three cycles in a year. When you see the beetles, remove them, and then look for the eggs. Apparently it lays maybe 450 eggs in a life time a dozen or so at a time on the underneath of leaves along the mid rib.



L. Salmon Star, amazing scent

The grubs hatch after about two weeks, and then feed for about three to four weeks and then drop to the ground. They burrow shallowly, pupate in a cocoon of saliva and soil for about three weeks, then emerge as adults to start all over again. If you had them in 2018, you have them in 2019.



L. African Queen, easy

Last years adults appear in April/May

Look for the adults coming up from the ground where they have overwintered in the debris, or where they have hibernated in a casing from a grub. They are bright red. Remove on sight, these are not

indigenous and we cannot be sure that the parasites are going to balance them out. Assume the adults are there but you cannot see them, inspect all sides and underneath the leaves, often they are deep in the core of the leaves and overlapped by other leaves that have yet to unfurl. You can put a white sheet or page under the part you are inspecting, as they sense danger and hunker down or drop off belly up.

The grubs seem a model for parasitic wasps, but of course the wasps have to build that link to them in Ireland. In the USA there were no parasites for the lily beetle, so they are testing wasp releases. When you think wasps, don't think of the yellow and black ones that sting us, think of the other five hundred varieties that are around us that you only sometimes notice. Our pals, a lot of them solo, here is an example to the right, laying eggs in a grub. This parasitic wasp, *Tetrastichus setifer* is being tested by the University of Montreal, with nearly 100% effectiveness. The problem with that is that beetles are needed to sustain wasps, oh well!



I had a colony of caterpillars that wasps parasitised, and a colony of grasshoppers that wasps unbelievably cut up and removed through a small hole left open for air. I stood in a wasps nest as a child and got more than thirty stings, so wasps and I have history.

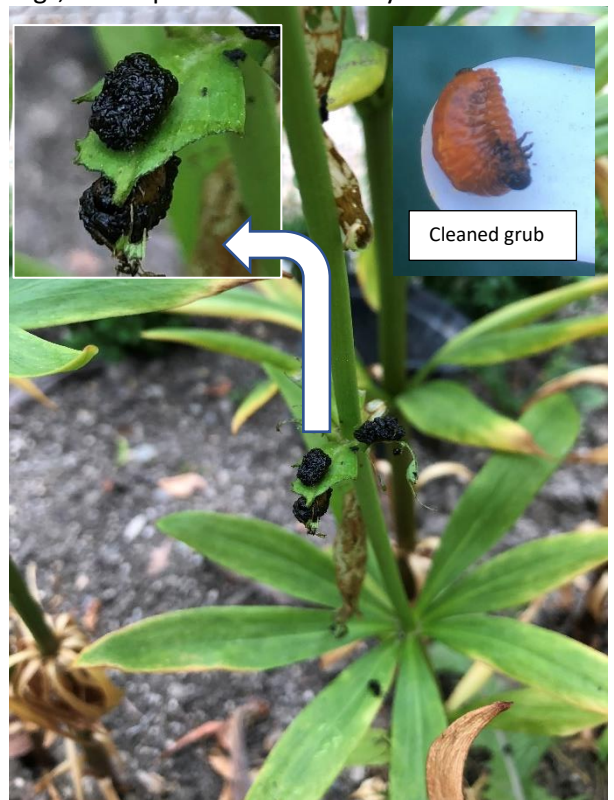
Control

If you are strictly organic, **pick and remove** the beetles. They drop off on their backs and merge with the ground, like our old friend the vine weevil, but they are out and about during the day and easy to see, but look closely because finding one means finding half a dozen.

You can also check in the first inch of ground at the base of plants, as they are there as well in their saliva and soil shells. I am going to do that as an experimental exercise in the next couple of weeks, put the soil in a perspex box and see if I have a dormant population.

Remove the leaves with eggs on them where you see them. Assume you have eggs, not the opposite, they are underneath the leaves.

People say **spray the orange grubs off with water**. I put on rubber gloves and collect them in a plastic bag, I intend them to have a 100% chance of not making it. You find them on the leaves covered in their own excrement as in this picture, one grub above the leaf and one below, hence the rubber gloves. Perhaps cut the leaf with fine scissors and let them drop into a bag or bucket of water. They destroy the lily leaves, then start on the flower before it matures, so the bulb weakens. They also may pass on viruses around the stock.



Effective spray

The product **Bayer Provado “ultimate bug killer”** seems very effective. It is systemic as well though, so it will linger for weeks. Bayer say it does not kill bees, but as we all know, if a bee is puzzled it can't find its hive from ten feet away, so confusing them is the same as killing them, and I suspect this confuses them. Hands up if you trust a chemical company on matters of safety. Hence the rubber gloves again.



L. Auratum Gold Band
L. Golden Stargazer, in the oriental bed

However if we hit the lilies and frits before they flower. Say when they are young and maybe six inches above the ground, perhaps we can minimise the risk to bees, while maximising the risk to the lily beetle family. This spray kills the beetles and the grubs. It is immediately effective in my experience.

Neem oil is also very successful, but you probably don't have it. Bunny Guinness recommends it as an organic pesticide, apparently it is good for shampooing dogs or something, but it makes an effective insecticide in the amount of a tea spoon to a gallon of spray, and just regularly douse the plants. I have it, but I am not sure you can get it in Ireland. The University of Rhode Island recommends it, and they are a speciality biological control adviser. I'll give the red coats a blast next year and report back.



C. Kasia-Aus

They fly

Unlike vine weevils, lily beetles have a split case, and fly well, much better than ladybirds, more like flies, and have considerable ability to cover distance and weave. They are pretty fast as well. I was very surprised at the speed and manoeuvrability of one that I actually came across in flight buzzing a stand of my lilies, around and around, then backing off, varying height and having a good look. It made the mistake of landing, once.

They chirp

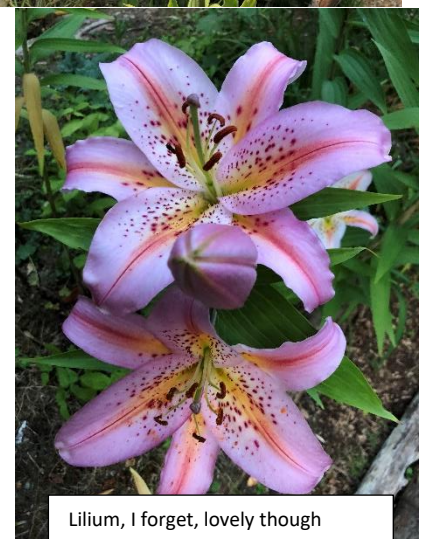
They make little chirping noises, it appears, though I have not heard them, but you can find this on the internet if you are interested. Apparently this “stridulation” is to alarm predators or call for attention (mating?), and is achieved by rubbing body parts together, a normal beetle activity.

They are as tough as old boots

I put a couple in a ziploc bag, three weeks later they were still alive. They eventually died.



L. tenuifolium, number one victim in 2018



Lilium, I forget, lovely though



L. Golden Splendour , one bulb now six years old

I don't think the photography on this youtube video by Adam Grochowalski can be improved and is worth watching for the time until the beetle comes out of the saliva and soil shell, have a look at the wings extension at about 57 seconds

<https://www.youtube.com/watch?v=5m-dFRthl3o>

Most susceptible lilies

I have found some lilies seem more susceptible than others and this is commented on below. I have read the comment that they seem to prefer asiatics to orientals, and their greatest depredations for me have been attacks on tiger lily types, with leaves in whorls around the stem. This may be incidence more than preference, as I had an isolated stand of these and the attacks were well advanced before I twigged what was going on. I found them on orientals as well.

Apparently the eggs die on Lilium "Black Beauty", which I also have and upon which I found a couple of beetles. On the acid soil lilies, like Auratum, Uchida, and those types, attacks were very

muted. Bear in mind though that the orientals flower later and latest, and it may be more to do with life cycle. However assume they will attack them all, with some preference for tigers until further notice.



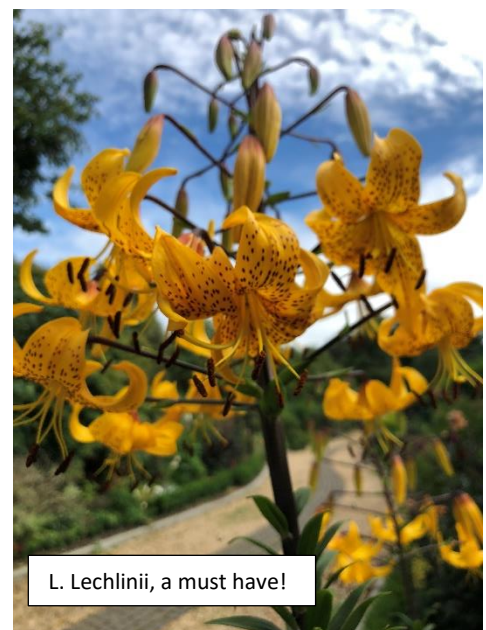
L. Speciosum Rubrum Uchida

The lilies were fine in 2018, roll on 2019. Some of the ones that did well in Sanabria last year are included in the article. After all, gardening is the hobby, not

pest control, so let's not lose sight of that. I don't grow a huge

number of different lilies, but I think next year might be a year to step up the numbers and varieties. The lily beetle exists, but it seems to me that early preventative treatment will greatly reduce the impact, as long as the plants are checked in detail every two weeks, and where notched leaves or larvae are seen.

Peter E. Lynch
Sanabria, November, 2018,
for the Foxrock and District Garden Club



L. Lechlinii, a must have!



L. Black Beauty, lazy fall over lily