

Helensburgh & Gareloch
Horticultural Christmas Pest and
Disease Q&A

Melissa Simpson
Slugs and New Zealand flatworms

Slugs



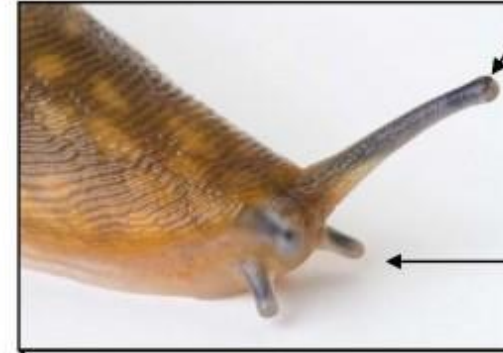
Keel-Some species have a keel along their back like this Common Keeled slug.



Optical tentacles

Sensory tentacles

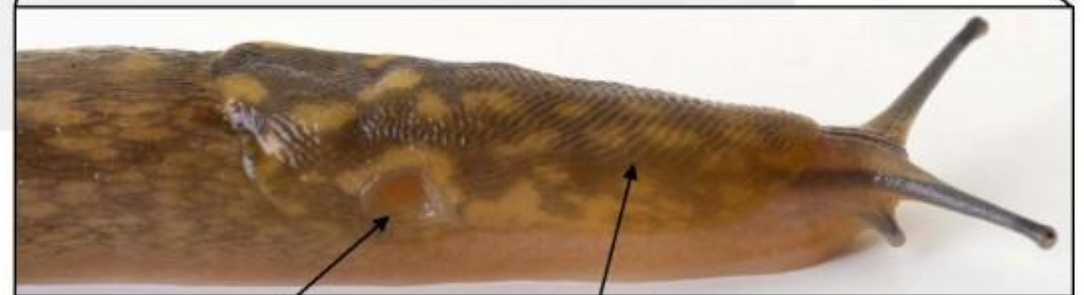
Mouth part



Foot

Pneumostome

Mantle



- There are approximately 30 species of slug in the UK and there are four main pest species that are native to the UK
- Most are herbivores eating leaves, flowers, fruits, mushrooms, lichens and decaying plant material
- Some are omnivorous and carnivorous eating carrion and some of which actively hunt other slugs and snails





Netted or grey field slug - *Deroceras reticulatum*

- feeds mostly on seeds and plants above ground (6cm) of all most damaging



Garden slug - *Arion distinctus/ Arion hornetnsis*

- attacks both leaf and roots (3cm)



Keel slug – *Tandonia budapestensis*

- spends most of its time underground (6cm) sickle shape likes tuplis



Large black/red slug - *Arion ater*

- eats seedlings (13cm) least damage



Invasive species

Spanish slug (*Arion vulgaris*)

- Produce twice as many eggs as slugs native to the UK
- Tolerate hotter and dryer environments
- Have an extensive omnivorous diet which includes excrement, dead animals and crops that aren't normally susceptible to slug feeding
- 8 – 15cm (fully mature)

Green soled Slug (*Arion Flagellus*)





Controlling slugs

- Slugs are so abundant in gardens that some damage has to be tolerated
- They have a role and predators!
- They cannot be eradicated so consider your most venerable plants
- Best time to attack is when it is warm, wet and at night

Best options:

- Hygiene and constant vigilance
- Pick and remove
- 'Nemaslug' (*Phasmarhabditis hermaphrodita*)
- Specific use of slug pellets (1 every 10cm)



New Zealand Flatworm



- Originated from the South Island of New Zealand
- The first confirmed records in Scotland were in 1965 (Royal Botanic Gardens in Edinburgh) from infected soil imported with plants
- Main means of dispersal into new areas through plant containers
- Feed on native earthworm



New Zealand Flatworm (*Arthurdendyus triangulates*)

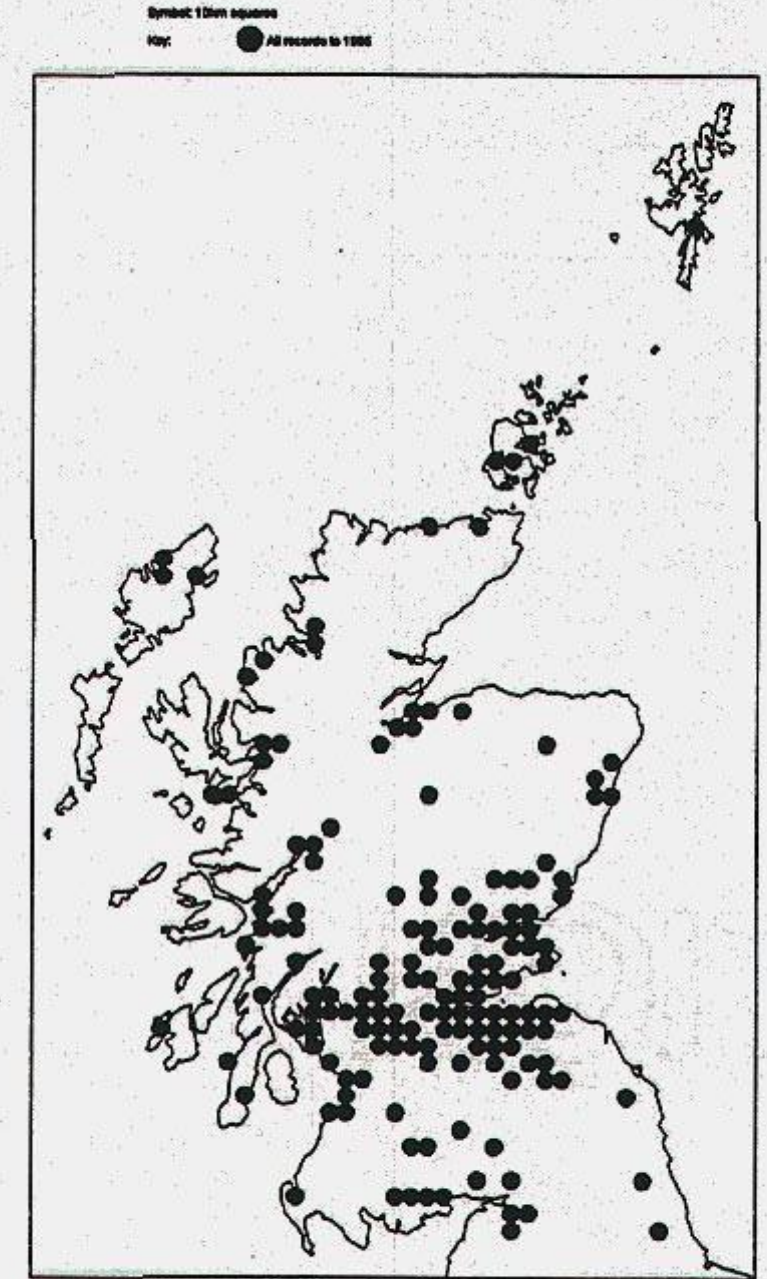
- Throughout the mainland of Scotland, Northern Ireland and into the Irish Republic and spreading into England and Wales, the Isle of Man, the Faeroe Islands and Iceland.

Australian Flatworm (*Australoplana sanguinea*)

- A native of Australia and New Zealand
- First identified in the British Isles from the Scilly Isles
- First record for Scotland (1995) made near Dumfries



Distribution of the New Zealand flatworm in Scotland



Control

- Hygiene
- Chemical - There are no approved chemicals
- Biological - Control (not effective) Native British predators such as ground beetles and rove beetles will eat the New Zealand flatworm
- Trapping



What we know and how to deal with them

- Surface feeders
- Don't like extremes of temperature (direct sun and frost)
- Similar conditions to slugs – warm, wet and in the dark
- They like being under black plastic and slabs/stones

Control by trapping – either under a black plastic bag or stones, check on a regular basis and squish to kill.

Native flatworms and similar species

1 Earthworms (*Lumbricus terrestris*):

these have cylindrical segmented bodies with colour evenly spread around the segments.

2 Leeches (*Hirudinea*):

these have a flattened segmented body with suckers at each end.

3. Native terrestrial flatworms (*Planarians sp*):

these have flat unsegmented bodies.

See video of what they look like in real life so you don't get your identification wrong!!

New Zealand Flat worm identification video

