

INSECTS ON CELMISIA

J.S. Dugdale

Some genera of native plants have an almost bewildering variety of insects attacking them - making galls, eating the flowers and fruits, boring out the apices, mining leaves. The largely alpine daisy genus Celmisia is one such. For a genus comprised of species most of which cannot be older than the Kaikoura orogeny, the alpine species of Celmisia support a large number of insects which feed only on this genus.

Much of the damage these insects do is easy to see, yet for many Celmisia species little is known of the occurrence of certain insects on them. In particular, for leafminers, gallmakers and leaf scourers records do not cover half the described mountain daisy species - especially the small species, like Celmisia laricifolia. Some members may like to look for damaged Celmisia species, and I would be very glad to receive them at Mt. Albert Research Centre, Private Bag, Auckland.

If we regard a Celmisia as a group of rosettes, then there are three main zones of attack - the rosette centre, the leaves and the flower head (including the scape).

The rosette centre:

A gall midge larva, pink, about 4 mm long, induces a trumpet gall in the rosette centre of C. viscosa, so far the only species known to be attacked. The trumpet gall is about 25 - 30 mm long, and is unmistakable. The midge larva lives inside the gall. After the adult fly has emerged, the gall (and the rosette) dies.

Rosettes may have their centres bored out by the brown-headed, fleshy pale grubs of a large weevil, which covers its activities with a thick billowing mass of tomentum - a tell-tale sign. Celmisia spectabilis is very prone to this. Other rosettes may have the pinkish caterpillars of bell-moths of the genus Gelophaula (about 12 species) boring inside. Caterpillars of Central Otago Gelophaula species eat out and kill rosette centres (if the perpendicular rosette centre leaves are lightly pulled, they will come out easily if Gelophaula is, or has been, active). Caterpillars of the Nelson, Marlborough, main axial range and Fiordland species bore among the petioles or through the developing central leaves, distorting growth but not always killing the plant. Gelophaula aenea - as bright as its name suggests, and first collected by J.D. Enys of Castle Hill - bores through the developing leaves of Celmisia lyalli, producing damage that looks like hare browsing.

The leaves:

Serpentine mines leading to an irregular blotch show that caterpillars of a tiny nepticulid moth have been active. We have no idea of the complete host range within Celmisia of this little moth. Larger blotches will be seen to be associated with bare, scoured patches in the tomentum underneath, or with an area of puffed-up tomentum. Pallid caterpillars are those of agile little dark moths (Simaethis) which rest with their wings lifted for take-off; purple-striped caterpillars are those of shortwinged (or brachypterous) moths which leap about over the sword. About 30 species of moths are involved in these three groups. Leaf beetles and their dark grubs browse on the foliage, making "windows" on the upper surface. Some species bore a tunnel into the rosette centre for shelter.

The flowers:

Up the Rangitata, on giant C. spectabilis plants, I came across nocturnal leaf-beetles chewing the ray florets and the tips of the disc florets to shreds. Grasshoppers (which eat everything) also browse the flowers, especially those of C. sessiliflora.

The flower heads in many Celmisias may have caterpillars of a looper moth or geometrid, or maggots of fruit flies or trypetids, (about 8 species) or, especially in Otago, grubs of little weevils (about 6 species). The numbers of infested seedheads may be so high in a mountain basin that one wonders if there may be some significant reduction in re-establishment at times.

All the above insect groups (except for the grasshoppers) are restricted to (i.e. monophagous on) Celmisia. Leaves with scour marks or mines, central rosette leaves distorted or discoloured or dead, mines on the leaves, silk and faecal pellets, or an accumulation of fluff around the leaf bases, discoloured disc florets, tattered ray florets all give a clue to the fact that an insect has been feeding. Since our knowledge is far from complete, such material, with plant name, locality, altitude, will always be welcome.

From International Code of Botanical Nomenclature

Art. 20.

The name of a genus ... may be taken from any source whatever, and may even be composed in an absolutely arbitrary manner.