Are *Dracophyllum* bud galls caused by *Eriophyes dracophylli* (Acari: Eriophyidae) or Cecidomyiidae (Diptera)?

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Terminal bud galls are common on narrow leaved species of *Dracophyllum* (Epacridaceae) in some parts of the country and are potentially good indicators of the presence of the herbivore causing the gall. However, until now it has been assumed that the galls are caused by *Eriophyes dracophylli* Lamb 1953 (Acari: Eriophyidae) (Lamb 1953, 1960, Manson 1984). In this paper I outline the evidence on which this assumption was based and the reasons why these galls are now believed to be caused by Cecidomyiidae (Diptera).

Eriophyes dracophylli was described by Lamb (1953) from specimens 'dwelling in bud galls' of *Dracophyllum recurvum*, collected from Tongariro National Park. The gall was described as a terminal bud gall and an additional host, *D. subulatum*, was also listed. Manson (1984), in his revision of the Eriophyoidea of New Zealand, examined the type slides and specimens of *E. dracophylli* from *D. subulatum*. Manson remarked that 'dried plant material – mainly Lamb's (1960) original material from which this species was described – was examined also, but no mites were found'. This material included *D. pronum* and *D. subulatum*. In the revision the mite was described as 'causing and occupying bud galls' (Manson 1984).

During extensive surveys of *Dracophyllum* spp. in indigenous ecosystems of the North and South Islands I have found terminal bud galls on *D. filifolium*, *D. recurvum*, *D. rosmarinifolium*, *D. subulatum* and *D. urvilleanum* (Fig. 1). No signs of eriophyid mites were found in any galls. Phytophagous mites (Tarsonemidae, probably *Stenotarsonemus* sp.) were present in some galls, living in the narrow spaces between leaves.

During spring and summer of 2002-03, dissection of galls on *Dracophyllum filifolium*, *D. recurvum*, and *D. subulatum* from Tongariro National Park, revealed fly larvae and pupae of undescribed Cecidomyiidae (Diptera). Adult flies were reared from galls of *D. filifolium* (Fig. 2). The female fly from this host plant has a very long ovipositor, presumably to enable eggs to be laid at the base of the young leaves. The internal structure of the gall, which includes a large chamber, is consistent with

Cecidomyiidae being the cause of the gall. Parasitoids (Hymenoptera) were also reared from galls. The specimens will be deposited in the New Zealand Arthropod Collection (NZAC), Landcare Research, Auckland.

Figure 1. Bud galls on *Dracophyllum filifolium* caused by a species of Cecidomyiidae. Green gall on left and old brown gall on right.

During the last few years, while examining galls in order to discover the causal organism, I have sometimes found eriophyid mites in leaf and flower bud galls caused by an insect or fungus. It appears that young galls of this kind can provide a suitable sheltered habitat and young plant tissue for species of these mites that normally live between young expanding leaves. Lamb (1953) mentions that the mites were only in young galls, an observation that fits the above explanation.

It can be concluded that *E. dracophylli* is not the cause of terminal bud galls on *Dracophyllum* species and that the causal organisms are undescribed Cecidomyiidae species.

Figure 2. Female cecidomyiid fly reared from a bud gall on *Dracophyllum filifolium*. Note the very long ovipositor.

References

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