

## A survey of indigenous gall forming invertebrates in New Zealand

Nicholas Martin \*<sup>1</sup>

<sup>1</sup> Research Associate Landcare Research, 231 Morrin Road, Auckland, 1072, New Zealand

New Zealand's indigenous gall forming invertebrates are represented in Acari, four insect orders: Coleoptera, Diptera, Hemiptera and Lepidoptera, and Nematoda. The number of gall inducing species are as follows: · Acari-Tarsonemidae (4 undescribed), Tenuipalidae (1), Eriophyoidea (57 + about 20 undescribed); · Coleoptera-Brentidae (1), Curculionidae (4 + 1 undescribed); · Diptera-Agromyzidae (1), Fergusoninidae (1), Tephritidae (2), Cecidomyiidae (7+ up to 150 undescribed); · Hemiptera-Aleyrodidae (2), Coccidae (5), Diaspididae (4 though *Poliaspis media* may be a species complex), Eriococcidae (13), Psylloidea (12 +>8); · Lepidoptera-Carposinidae (1), Gelechiidae (1), Gracillariidae (1), Oecophoridae (2), Thyrididae (1), Tortricidae (1); · Nematoda-Neotylenchidae (1). The galls induced by Coleoptera and Lepidoptera are relatively simple, mainly swollen stem tissue with a chamber. Many scale Coccoidea galls are shallow hollows/pits in leaves or deeper pocket galls in leaves or stems. Others involve leaf edge rolls or folds, or blisters. In the Acari, Tarsonemidae induce leaf edge roll galls (3) or shoot stunting, while the tenuipalid induces a large stem gall. Diverse and complex galls are induced by Eriophyidae with erineae, pocket galls and 'bud/callous' galls being common. The nematode *Fergusobia pohutukawa* Davies (Neotylenchidae) and its mutualistic fly, *Fergusonina metrosiderosi* Taylor (Fergusoninidae) induce basal stem galls in *Metrosideros excelsa* (Myrtaceae). The agromyzid and one tephritid induce stem galls while the other tephritid larva lives in a bud gall. The Cecidomyiidae induce a wide variety of galls of varying complexity. Some plants, such as *Coprosma* species may have up to five kinds of galls present.

