

Insect Pests of Ironwood, *Casuarina equisetifolia*, on Guam

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January 9, 2012

Casuarina Gall Wasp Damage Survey

METHODS: We sampled the most horizontally protruding branch within a height range of 2 to 3 meters above the ground. The sample was trimmed so that it contained only the terminal foot (30.5 cm) of woody tissue. All branchlets were removed and tips were examined under a dissecting microscope. We recorded whether or not tips were galled and counted gall wasp exit holes. Galled and ungalled branchlets from each sample were put in paper envelopes which were placed in a drying oven and weighed to determine dry biomass.

RESULTS: Fourteen trees were sampled from various locations on Guam. Proportion of branchlets which were galled ranged from 2% to 82%. Branchlets with galled tips were noticeably stunted in comparison to ungalled tips with a mean reduction in dry biomass of 35% (t-test; $t = 3.0618$, $df = 13$, $p\text{-value} = 0.009$).

HEMIPTERA: COCCOIDEA (scale insects)

- ▶ Margarodidae
 - ▶ *Icerya purchasi* (cottony cushion scale)
 - ▶ *Steatococcus samaraius*
- ▶ Diaspididae
 - ▶ *Lepidosaphes similis*



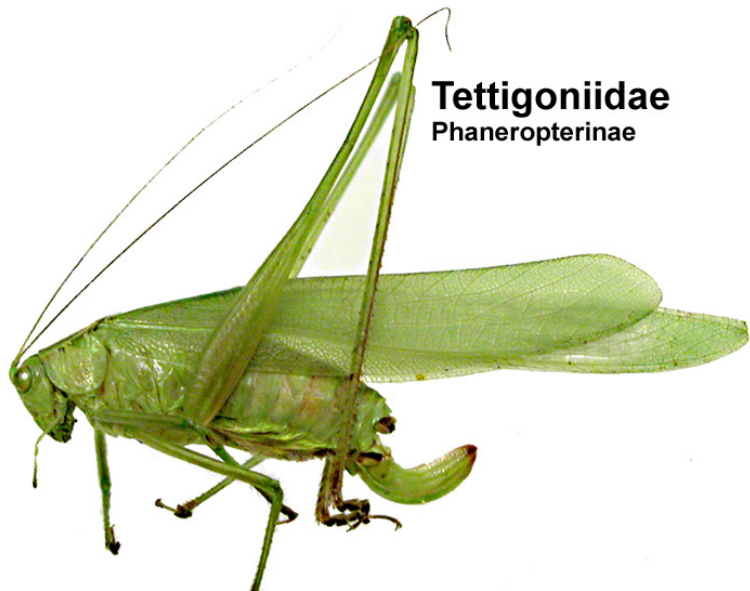
COLEOPTERA (beetles)

- ▶ Scarabaeidae (scarab beetles)
 - ▶ *Protaetia orientalis* (Oriental flower beetle)
 - ▶ *Protaetia pryeri* (Midway emerald beetle)



ORTHOPTERA (grasshoppers)

- ▶ Tettigoniidae (katydids)



Tettigoniidae
Phaneropterinae

Katydid Oviposition Scars on *Serianthes nelsonii* twigs



LEPIDOPTERA (moths)

- ▶ Noctuidae
 - ▶ *Spodoptera* sp. (armyworm)
- ▶ Psychidae
 - ▶ *Brachycyttarus griseus* (grass bagworm)

