



New species of oak gallwasps from Taiwan (Hymenoptera: Cynipidae: Cynipini)

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Abstract

Three new species of oak gallwasps from Taiwan are described: *Andricus songshui* and *Andricus pseudocurvator*, both known to induce integral leaf galls on *Quercus serrata*, and *Plagiotrochus glaucus* which induces stem swelling-like galls on *Quercus glauca*. Galls and adults of new species are described; data on the diagnosis, distribution and biology of the new species and a key to the Taiwanese *Andricus* species are also given.

Key words: *Andricus*, *Plagiotrochus*, taxonomy, distribution, biology

Introduction

The cynipid gallwasp fauna of the Eastern Palaearctic and Oriental region is poorly known: only 35 valid species are recognised from the Eastern Palaearctic, mostly from Japan and the Russian Far East. Only few oak gallwasp species from the Oriental region have yet been described or mentioned as “cynipid gallwasp” (Kovalev 1965; Mani 2000; Abe *et al.* 2007; Melika *et al.* 2010), most of which are from Taiwan (Tang *et al.* 2009; Melika *et al.* 2010). In Taiwan the plant family Fagaceae is represented by 3 genera which serve as hosts for oak gallwasps (Cynipini): *Castanopsis* (D. Don) (8 species); *Lithocarpus* Blume (= *Pasania* (Miq.)) (15 species); *Quercus* L. subgenus *Cyclobalanopsis* Oerst. (13 species), and *Quercus* subgenus *Quercus* (10 species in two sections, *Cerris* and *Quercus*) (Govaerts & Frodin 1998; Lu *et al.* 2006). To date, eleven gall morphotypes attributed to cynipids have been described from Taiwan (Yang & Tung 1998; Yang *et al.* 2000), from which only three valid species are known: *Andricus formosanus* Tang & Melika (Tang *et al.* 2009), *Trichagalma formosana* Melika & Tang (Melika *et al.* 2010), and *Cerroneuroterus vonkuenburgi* (Dettmer) (Melika *et al.* 2010). Here we describe three new oak gallwasp species from Taiwan which are associated with either the subgenus *Cyclobalanopsis* or *Quercus*.

Material and methods

We follow the current terminology of morphological structures and surface sculpturing (Ronquist & Nordlander 1989; Liljebblad & Ronquist 1989; Melika 2006; Harris 1979). Abbreviations for fore wing venation follow Ronquist & Nordlander (1989), cuticular surface terminology follows that of Harris (1979). Measurements and abbreviations used here include: F1–F12, 1st and subsequent flagellomeres; POL (post-ocellar distance) is the distance between the inner margins of the posterior ocelli; OOL (ocellar-ocular distance) is the distance from the outer edge of a posterior ocellus to the inner margin of the compound eye; LOL, the distance between lateral and frontal ocelli. The width of the forewing radial cell is measured from the margin of the wing to the Rs vein. In cynipoid literature