



A new genus of oak gallwasps, *Cycloneuroterus* Melika & Tang, with the description of five new species from Taiwan (Hymenoptera: Cynipidae: Cynipini)

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Abstract

A new genus of cynipid oak gallwasp, *Cycloneuroterus* Melika & Tang (Hymenoptera: Cynipidae: Cynipini), containing five new species, *C. lilungi*, *C. longinuxus*, *C. lirongchiuea*, *C. fortuitus* and *C. formosanus*, is described from Taiwan. Diagnostic characters and generic limits of the new genus are discussed in detail and a key to a group of closely related genera which share a suite of diagnostic genus-level characters is given. Descriptions of galls and adults, data on the diagnosis, distribution, host plant associations and biology of the new species, and a key to all five species are given.

Key words: Cynipidae, oak gallwasp, *Cycloneuroterus*, *Neuroterus*, taxonomy, distribution, biology

Introduction

Current taxonomy of Cynipini (Cynipidae) must incorporate recent advances in the understanding of the phylogeny and evolution of oak gallwasps, in particular the evidence for very strong conservatism of gallwasp host plant associations at the level of subgenera and sections within the oak genus *Quercus* L. Analyses of Western and some Eastern Palearctic oak gallwasps have revealed a deep phylogenetic divide between gallwasp taxa galling oaks in the section Cerris and those galling oaks in the section *Quercus* [s.s.] (Cook *et al.* 2002; Ács *et al.* 2007; Liljeblad *et al.* 2008; Stone *et al.* 2009). These analyses showed some genera to be polyphyletic, representing artificial groupings and forced the reappraisal of generic limits, with descriptions of new genera galling section Cerris (Melika *et al.* 2010). Based on this deep phylogenetic split between gallwasp taxa galling oaks in different sections within *Quercus* subgenus *Quercus*, we could suspect even deeper splits to be present among Asian gallwasp groups, both between taxa galling different subgenera of *Quercus* (*Quercus* and the Asian endemic *Cyclobalanopsis*) and between *Quercus*-gallers and those associated with non-*Quercus* host plant genera (the Asian endemics *Castanopsis* and *Lithocarpus*).

The cynipid gallwasp fauna of the Eastern Palearctic and Oriental regions is poorly known. Only 35 valid species are recognised from the Eastern Palearctic, mostly from Japan and the Russian Far East, and only a few oak gallwasp species have yet been described or mentioned as “cynipid gallwasp” from the Oriental region (Kovalev 1965; Mani 2000; Abe *et al.* 2007; Melika *et al.* 2010). Eleven gall morphotypes attributed to cynipids have been described from Taiwan (Yang & Tung 1998; Yang *et al.* 2000), yet from these only three valid species are currently known: *Andricus formosanus* Tang & Melika (Tang *et al.* 2009), *Trichagalma formosana* Melika & Tang and *Ceroneuroterus vonkuenburgi* (Dettmer) (Melika *et al.* 2010).