

NEW FAMILY PLACEMENT FOR THE GENUS *CYNIPENCYRTUS*
(HYMENOPTERA: CHALCIDOIDEA: TANAOSTIGMATIDAE)

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Abstract. — The genus *Cynipencyrtus* is moved to the Tanaostigmatidae from the Encyrtidae. Characters are given to distinguish this genus from Encyrtidae, and from other Tanaostigmatidae. A redescription of the genus is given.

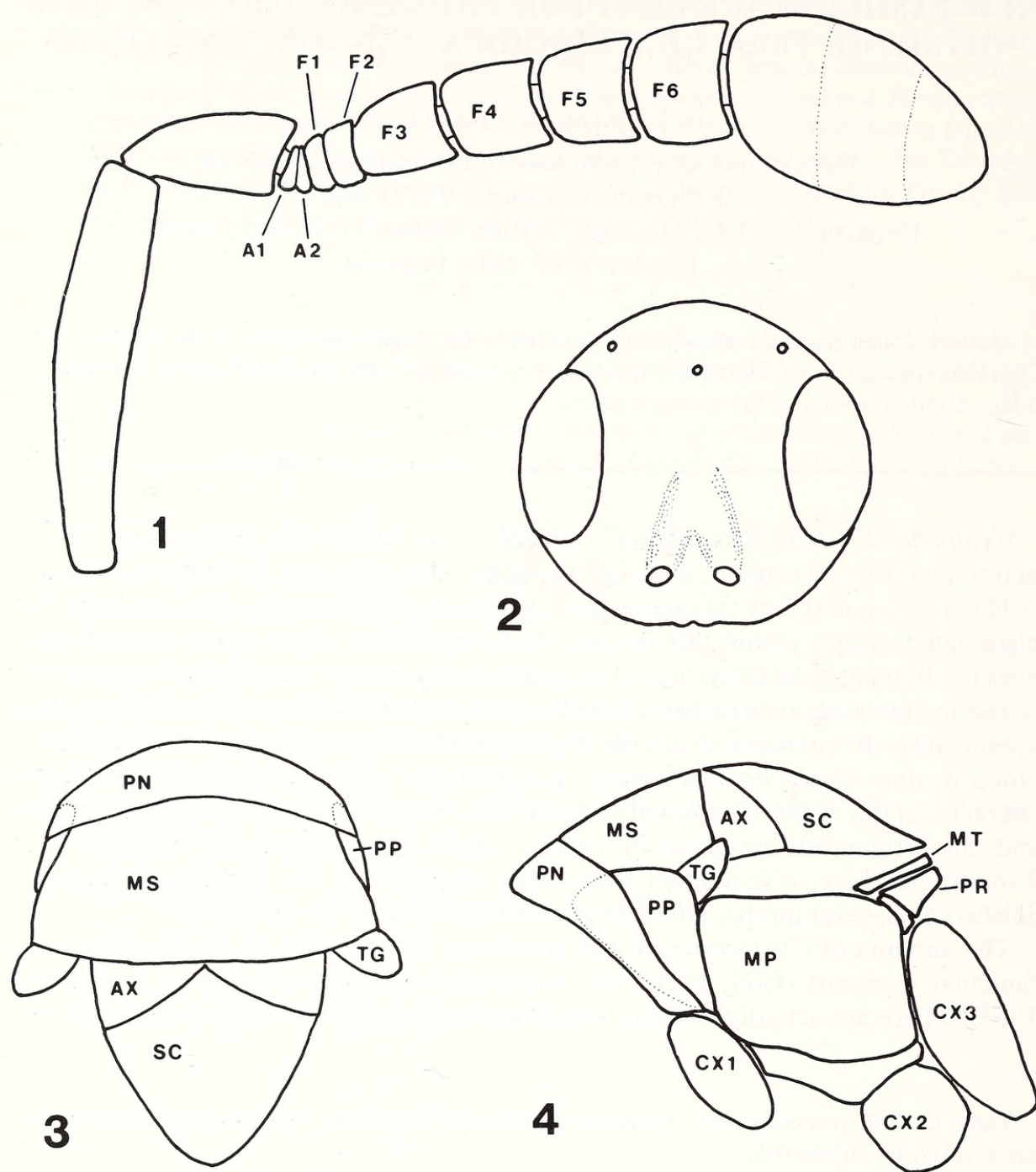
Cynipencyrtus Ishii was originally placed in the Encyrtidae. Subsequent workers maintained this placement, although Compere and Annecke (1960) and Tachikawa (1963, 1978) noted that this genus is so distinct morphologically as to be difficult to place satisfactorily within this family. Our examination of the genus reveals that it does not belong in the Encyrtidae, but in the closely related family Tanaostigmatidae.

Tanaostigmatids are distinguished from encyrtids and other chalcidoids by a single apomorphy, the presence of a large prepectus which is distinctly swollen anteriorly. Not only does *Cynipencyrtus* possess this attribute, it also lacks several apomorphic character states which are found in encyrtids. These differences between encyrtids and tanaostigmatids are given in Table 1. Although *Cynipencyrtus* belongs in the Tanaostigmatidae, it is distinct from other members of this family, and is distinguished by several unique character states which are given in Table 2.

The antenna of *Cynipencyrtus* was previously described as having 2 anelli and 5 funicular segments (Ishii, 1928), or 3 anelli and 4 funicular segments (Tachikawa, 1963). There are actually 2 anelli (which are very small, and difficult to distinguish

Table 1. Differences between Tanaostigmatidae and Encyrtidae. Apomorphic character states are marked by an asterisk.

| Encyrtidae | Tanaostigmatidae |
|--|---|
| Prepectus not swollen | *Prepectus, large, distinctly swollen anteriorly |
| *Cerci usually advanced on metasoma | Cerci situated at apex of metasoma |
| *Articulation of middle coxa usually anterior to midline of mesosternum | Articulation of middle coxa posterior to midline of mesosternum |
| *Marginal vein usually very short, often punctiform or wider than long, rarely as long as stigmal vein | Marginal vein distinctly longer than wide (more than 5 times); longer than stigmal vein |
| *Antenna at most with 1 anellus and with from 2 to 7 funicular segments | Antenna with 2 anelli and 6 funicular segments |



Figs. 1-4. *Cynipencyrtus flavus* Ishii, female. 1. Antenna. 2. Head, frontal view. 3. Mesosoma, dorsal view, showing only pronotum, mesoscutum, prepectus, tegula, scutellum, axilla. 4. Mesosoma, lateral view. A, anellus; AX, axilla; CX, coxa; F, funicular segment; MP, mesopleuron; MS, mesoscutum; MT, metanotum; PN, pronotum; PP, prepectus; PR, propodeum; SC, scutellum; TG, tegula.

even with good preparation and optics) and 6 funicular segments, the first 2 of which are reduced in size to only slightly larger than anelli (Fig. 1).

Biologically, *Cynipencyrtus* differs from other tanaostigmatids in host preference. Individuals are entomophagous, being parasitic on several species of Cynipidae that

Table 2. Differences between *Cynipencyrtus* and other genera of the Tanaostigmatidae.

| <i>Cynipencyrtus</i> | Other Tanaostigmatidae |
|---|--|
| First 2 funicular segments reduced to the size of anelli (Fig. 1) | Rarely with first funicular segment reduced to the size of an anellus, usually with no segments so reduced |
| Pronotum clearly visible in dorsal view; partially overlapping prepectus laterally (Figs. 3, 4) | Pronotum not or only barely visible in dorsal view; not overlapping prepectus |
| Notauli absent (Fig. 3) | Notauli present, usually complete |
| Vertex vaulted, projecting distinctly above dorsal eye margin (Fig. 2) | Vertex not vaulted, not or only slightly projecting above dorsal eye margin |
| Ocelli small and widely separated, distance between lateral ocellus and median ocellus more than 5 times diameter of ocellus (Fig. 2) | Ocelli not small and not widely separated, distance between lateral ocellus and median ocellus usually less than twice diameter of ocellus |

form galls on *Quercus serrata* (Ishii, 1928; Tachikawa, 1973, 1978). All other tanaostigmatids are phytophagous, the majority being gall-formers.

Cynipencyrtus Ishii

Cynipencyrtus Ishii, 1928:102, 106–107. Type species *Cynipencyrtus flavus* Ishii, 1928 (original designation).

Cynipencyrtus was described with two included species: *C. flavus* and *C. bicolor* Ishii (1928). These two species were later synonymized (Tachikawa, 1978), and the genus presently contains only the single species, *C. flavus*.

Female: *Head* (Fig. 2) vaulted between eyes, vertex in frontal view distinctly higher than dorsal margin of eye. Occipital margin narrowly rounded. Ocelli small, widely separated; lateral ocellus separated from eye margin by twice its own diameter, and from median ocellus by at least 5 times its own diameter. Antenna inserted low on face, below level of ventral margin of eye. Mandible with three teeth.

Antenna (Fig. 1) with two anelli and 6 funicular segments. Anelli very small and hard to differentiate from each other. First 2 funicular segments much smaller than following segments, only slightly larger than the anelli. Scape elongate. Club entire, with two very weak transverse sutures.

Mesosoma (Figs. 3, 4) with transverse pronotum clearly visible in dorsal view; in lateral view posterior margin of pronotum overhanging and partially obscuring prepectus. Mesoscutum without notauli. Prepectus large, swollen anteriorly, partially obscured anteriorly by pronotum, broadly attached posteriorly to the mesopleuron. Middle coxa inserted near the posterior margin of the mesopleuron.

Wings hyaline. Fore wing with marginal vein slightly longer than stigmal vein. Postmarginal vein distinctly longer than marginal vein.

Metasoma with posterior margin of all terga straight, without medial incision. Cerci located apically on the metasoma.

Male: Similar to female except in genitalia. Antenna displaying no sexual dimorphism.

ACKNOWLEDGMENTS

The authors wish to thank T. Tachikawa for generously providing us with specimens and information, and G. A. P. Gibson for critical comments on the manuscript.

LITERATURE CITED

- Compere, H. and D. P. Annecke. 1960. A reappraisal of *Aphycus* Mayr, *Metaphycus* Mercet, and allied genera (Hymenopt: Encyrtidae). J. Entomol. Soc. South Afr. 23(2):375-389.
- Ishii, T. 1928. The Encyrtinae of Japan. Bull. Imp. Agric. Exp. St. Japan III(2):79-160.
- Tachikawa, T. 1963. Revisional studies on the Encyrtidae of Japan (Hymenoptera: Chalcidoidea). Mem. Ehime Univ., Sec. VI (Agriculture) 9(1):1-264.
- Tachikawa, T. 1973. Discovery of the hosts of *Cynipencyrtus bicolor* Ishii and *Microterys tarumiensis* Tachikawa (Hymenoptera: Chalcidoidea—Encyrtidae). Trans. Shikoku Entomol. Soc. 11(4):133-134.
- Tachikawa, T. 1978. A note on the genus *Cynipencyrtus* Ishii (Hymenoptera: Chalcidoidea—Encyrtidae). Trans. Shikoku Entomol. Soc. 14(1-2):69-71.

Received February 27, 1985; accepted May 29, 1985.



Lasalle, John and Noyes, John S. 1985. "New Family Placement for the Genus *Cynipencyrtus* (Hymenoptera: Chalcidoidea: Tanaostigmatidae)." *Journal of the New York Entomological Society* 93, 1261–1264.

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