DISCOVERY OF THE MALE OF *AGENIASPIS CITRICOLA* (HYMENOPTERA: ENCYRTIDAE), PARASITOID OF THE CITRUS LEAFMINER *PHYLLOCNISTIS CITRELLA* (LEPIDOPTERA: GRACILLARIIDAE)

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ABSTRACT

The male of *Ageniaspis citricola* Logvinoskaya, reared from the citrus leafminer, *Phyllocnistis citrella* Stainton, is described and figured.

Key Words: *Ageniaspis*, citrus leafminer, *Phyllocnistis*, citrus.

RESUMEN

Se describe e ilustra el macho de *Ageniaspis citricola* Logvinoskaya, criado del minador de la hoja de los cítricos, *Phyllocnistis citrella* Stainton.

The citrus leafminer, *Phyllocnistis citrella* Stainton invaded Florida citrus in May of 1993 (Knapp et al. 1993). This pest species was described from India in 1856 and was reported for the first time in Australia in 1940. Australian researchers introduced two parasitoid species collected in Thailand into Australia in 1990/1991 as biological control agents of this pest. Logvinoskaya (1983) described the female of one of these species, *Ageniaspis citricola*, from specimens reared from *Phyllocnistis citrella* in Vietnam.

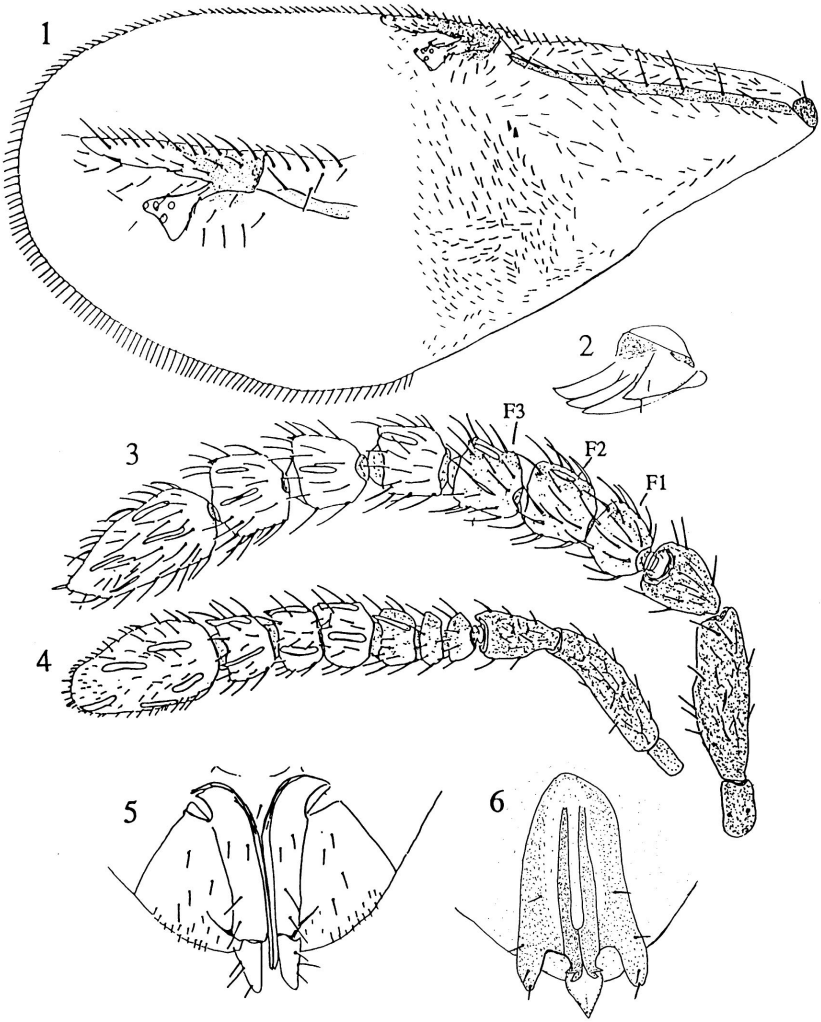
Due to the great concern over the threat the citrus leafminer poses to the citrus industry, researchers have begun to search for effective parasitoids to introduce into Florida in order to mitigate damage caused by this pest (Hoy & Nguyen 1994). Dr. Marjorie Hoy of the University of Florida collected *A. citricola* in Australia in April 1994. The parasitoid was released in various sites in Florida later the same month. Males of *A. citricola* were discovered emerging from *P. citrella* specimens collected by Dr. Hoy in Australia.

Ageniaspis citricola Logvinoskaya
Figs. 1-6

Male:

Length: 0.9-1.1 mm, *Color*: Head, thorax and gaster, dark brown; all legs dark brown except yellow tarsi and distal one-third of mid and hind tibiae; fore wing hyaline with brownish submarginal and marginal veins and slight infuscation under marginal vein; radicle, scape, pedicel dark brown, F1-F3 light brown, F4-F6 and club yellow. *Structure*: Head as wide as thorax, lateral ocellus one ocellus diam from eye,

mandible tridentate (Fig. 2) with sharp inner tooth; antennae (Fig. 3) with radicle, scape and pedicel, 2, 2.7 and 2 times longer than wide, respectively; funicle 6-segmented, all segments quadrate and subequal to each other, with the following numbers of longitudinal sensillae: F1:0, F2:1, F3:1, F4:2, F5:2; F6:3; club 1-segmented, 2.2 times longer than wide, with 4 longitudinal sensillae, apex rounded. Mesoscutum entire with longitudinal, semi-striate sculpture and about 45 setae; scutellum similar to mesoscutum in sculpture, with about 16 setae and small, round placoid sensillae about 4 times the diam of one sensillum apart from each other; endophragma fuscous, slightly shorter than length of scutellum. Fore wing (Fig. 1) broad, 2 times longer than



Figs. 1-6. *Ageniaspis citricola* 1) Fore wing ♂ 2) mandible ♂ 3) antenna ♂ 4) antenna ♀ 5) ovipositor 6) aedeagus.

wide; marginal fringe very short, about 0.07 times as long as greatest width of fore wing; costal cell with about 44 setae; speculum with two arrowhead-shaped setae; disk setae dense; submarginal vein long, about 9 times as long as marginal vein, with 10 setae and a small gap between it and the marginal vein; marginal vein shorter than postmarginal and stigmal veins; postmarginal vein 1.6 times longer than stigmal vein. Gaster short, aedeagus (Fig. 6) arising in the apical quarter of the gaster and less than one-half as long as mid-tibia. Ovipositor (Fig. 5) shown for comparison of sexual differences.

Specimens examined: 8 males, reared from *Phyllocnistis citrella* on *Citrus* sp., Australia, near Mundubbera, Queensland, 18 April 1994, M. Hoy.

DISCUSSION

The discovery of males of this species has major implications on rearing and colonization strategies for this parasitoid. Sexual dimorphism in this species is not as prominent as it is in most encyrtid species where males can often be distinguished from females based on differences in coloration and/or by the longer setae or rami of the male antenna. Males of this species are very similar to the females in shape and color and differ very little in the length of the antennal setae. The males can be most easily distinguished from the females by the shape of the F1 and F2 antennal segments (Fig. 3). These segments are very short, much broader than long, each only about one-half as long as F3 in females (Fig. 4); whereas in males these segments are quadrate, each about as long as F3.

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