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# *Gynaikothrips uzeli* (Zimmermann) y *Androthrips ramachandrai* Karny (Thysanoptera, Phlaeothripidae), primeras citas para la Argentina

# *Gynaikothrips uzeli* (Zimmermann) and *Androthrips ramachandrai* Karny (Thysanoptera, Phlaeothripidae), first records for Argentina

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## RESUMEN

Se cita por primera vez para la Argentina *Gynaikotrhrips uzeli* y *Androthrips ramachandrai* en agallas sobre hojas de *Ficus benjamina* en la Provincia de Misiones. La primera de estas especies es fitófago inductor de agallas y la segunda presumiblemente predadora. Se brinda una descripción breve y se ilustran ambas especies.

**Palabras clave**
agalla • trips del ficus • *Ficus benjamina* • *Gynaikotrhrips uzeli* • *Androthrips ramachandrai*

## ABSTRACT

*Gynaikothrips uzeli*, and *Androthrips ramachandrai* are recorded at the first time for Argentina in leaf galls of *Ficus benjamina* in Misiones province. The first is phytophagous and gall inducer; but the second is probably a predator. A brief description and illustrations of both species are given.

**Key words**
leaf gall • weeping ficus thrips • *Ficus benjamina* • *Gynaikothrips uzeli* • *Androthrips ramachandrai*

## INTRODUCTION

*Ficus benjamina* L. is an ornamental shrub commonly used in the region of the North East of Argentina (NEA), mainly the provinces of Corrientes and Misiones. Its use can be either for ornamentation of parks or for urban trees. Recently, at several

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localities in Misiones Province, leaves of this tree were observed formed into galls or folded along the central vein and thrips were found associated with these symptoms.

Initially, the damage was attributed to *Gynaikothrips ficorum* (Marchal), the only species in this genus recorded from Argentina (4, 6) in 1968 on leaves of *Ficus laevigata* Blanco. Apparently this species is widespread in the Federal Capital of Argentina (5).

The genus *Gynaikothrips* comprises 41 species considered valid (13). It is characterized by antennal segment III with one sensorium and 3 or (3 + 1) on segment IV. Also not all the pronotal setae are well-developed, and there are numerous deep striations on the pronotum, giving it a strongly sculptured look (15).

### Objective

The aim of this work is to record for the first time two species of thrips from Argentina associated with galled leaves on *Ficus benjamina*.

## MATERIALS AND METHODS

Two samples of thrips were collected on plants of *Ficus benjamina* with the help of a fine brush. Insects were preserved in alcohol at 70% and carried to the Fitovirología laboratory of EEA Mendoza INTA for identification. Material was cleared with KOH to 10%, then, it was transferred to capsules with increasing concentrations of ethyl alcohol for their dehydration. It completely cleaned in clove oil and mounted on slides into Balsam of Canada (15).

The specimens were identified with the help of keys and by confrontation with descriptions (1, 10, 11, 12, 14, 15). The material was photographed using a microscope Zeiss Axiostart Plus equipped with a digital camera. Specimens are deposited in the EEA Mendoza INTA fitovirología laboratory.

## RESULTS

According to the study of the morphological characters of adults found in Misiones, these correspond to the species *Gynaikothrips uzeli* (figure 1, p. 255). With adults of *Gynaikothrips* were found larvae (figure 2, p. 255), other immature of this species and female adults of *Androthrips ramachandrai* (figure 3, p. 255). This last characterized by the presence of fore femurs thickened, with a tooth near to their base, and few small tubercles in the inner side of them and a tooth in each fore tarsus.

Viewed a stereoscopic microscope are distinguished among themselves because *Gynaikothrips* presents the last abdominal segment (tube), comparatively longer, antennas longer and thin, predominantly yellow and not thickened fore femurs.

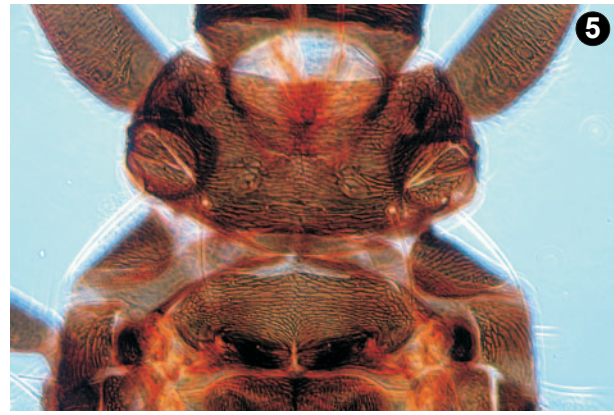


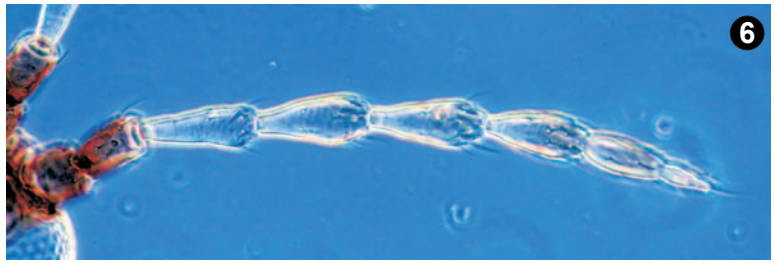

***Gynaikothrips uzeli.*** **1** Adult ♂. **2** Larva. **3** *Androthrips ramachandari* ♀.

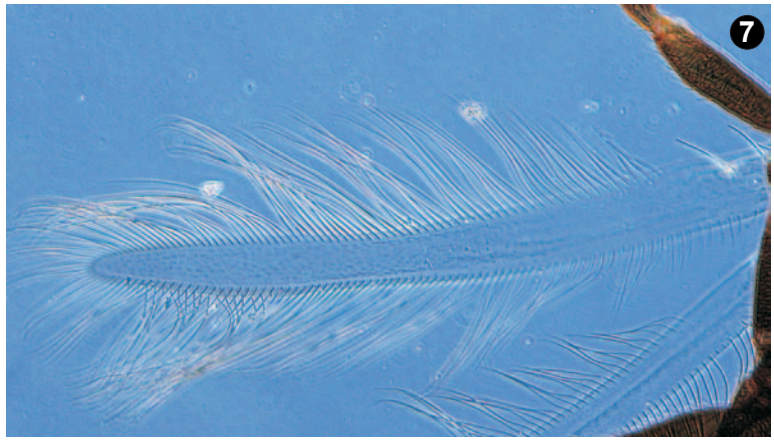
**Brief description of the species**
***Gynaikothrips uzeli* (Zimmermann, 1900)**

Female macroptera

*Colour*. Body brown, antennal segment III-VIII, tarsus, fore tibias and apical part of the middle and hind tibias yellow. Forewings pale.


***Gynaikothrips uzeli.*** **4** Head. **5** Pronotum y Mesonotum. **6** Antenna. **7** Forewing.

*Structures*. Head longer than wide, strongly striate, with a pair of short setae behind to posterior ocellus and two pairs of well developed setae blunt pointed not in a row behind of the eyes, maxilars stylets far apart each other about a thirds of the head wide (figure 4). Antenna 8-segmented (figure 6), III with one sensorious y IV with three sensorious. Pronotum strongly sculpturated, with epimeral setae and usualy posteroangulars well developed, anteromarginals y anteroangulars with variable length (figure 5).

Fore tarsus with one small tooth each one. Mesonotum reticulate, with the thirds divided (figure 5, p. 256). Metanotum also reticulate. Forewing parallel sided, with about 15 duplicated cilia. (figure 7, p. 256). Pelta broadly triangular; tergites II - VII with two pairs of sigmoid wing-retaining setae; tube equal or scarcely longer than head.

Male macroptera (figure 1, p. 255) similar to female but smaller.

**Examined material:** 5 ♀♀ and 8 ♂♂ collected by J. P. Agostini, October of 2010, on leaves gall of *Ficus benjamina*, Eldorado, Misiones province. In table is showed measurements of some setae, head and tube of examined material.

**Table.** Length in micra of head, tube and some pronotal setae of *Gynaihothrips uzeli* specimens from Argentina.

| | Female (n=5) | | Male (n=8) | |
|---|---|---|---|---|
| **Features** | **Mean** | **Range** | **Mean** | **Range** |
| **Head** | 313 | 270 - 341 | 258 | 244 - 280 |
| **Tube** | 372 | 310 - 415 | 264 | 244 - 310 |
| **Pronotum** | 183 | 161 - 203 | 142 | 122 - 168 |
| **Body** | 2,840 | 2,580 - 3,180 | 2,155 | 1,920 - 2,500 |
| **Pronotal setae** | | | | |
| anteromarginal | 59 | 49 - 73 | 48 | 34 - 71 |
| epimeral | 143 | 112 - 166 | 101 | 85 - 124 |
| posteroangular | 132 | 90 - 159 | 75 | 39 - 100 |
| discals | 13 | 12 - 15 | 11 | 10 - 15 |
| **Ratio head/tube** | 0,84 | 0,80 - 0,88 | 0,98 | 0,90 - 1,04 |
| **Ratio epimeral/posteroangular** | 0,92 | 0,80 - 1,00 | 0,74 | 0,40 - 1,00 |

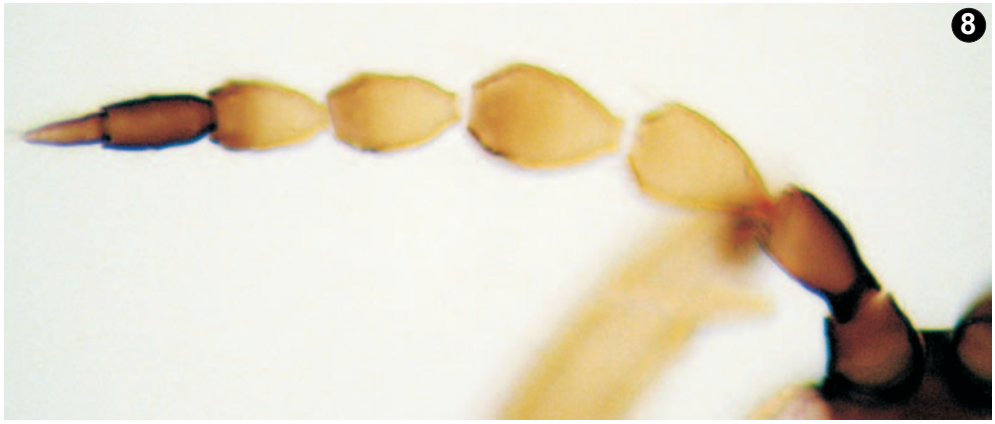
***Androthrips ramachandrai* Karny, 1926**

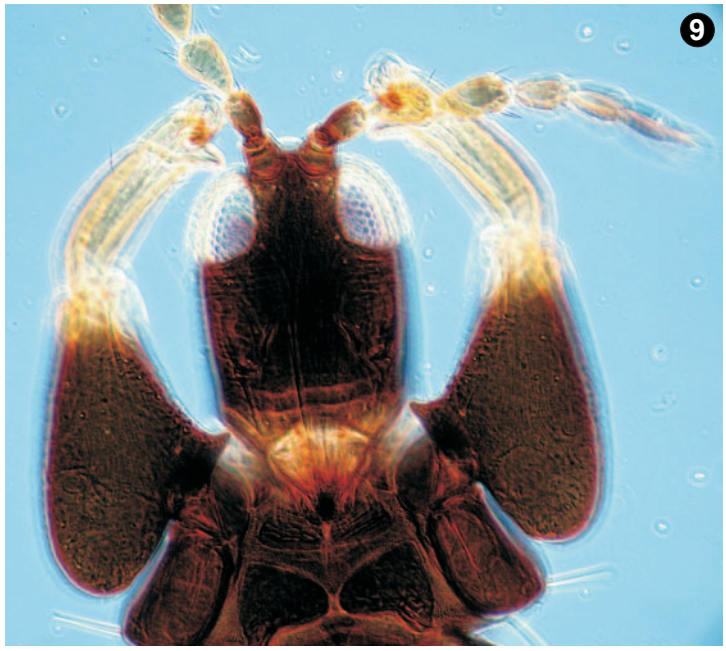
Female macroptera (figure 2, p. 255).

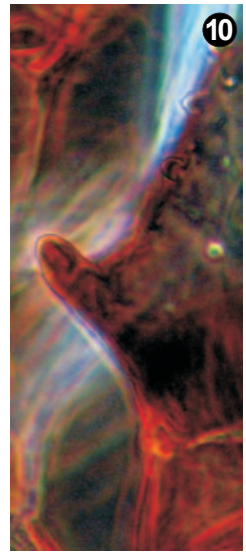
*Colour*. Body and legs brown, tarsi yellow, antennal segment III , fore tibiae, apex of midle and hind tibiae yellow, antenal segments IV - VI ligth brown with base variably yellow (figure 8, p. 258); forewings pale.

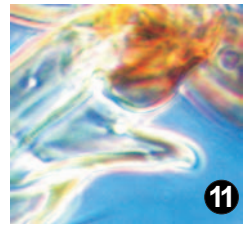
*Structures.* Head scarcely longer than wide; postocular setae long with apex weakly capitate behind of eyes; maxillary stylets about one third of head width apart. Antennae 8-segmented; segment III with three sensoria, IV with four sensoria. Pronotum with almost no sculpture; four pairs of major setae present, anteromarginals not developed. Fore femur thikened (figure 9, p. 258), with a tooth near base and rounded tubercles on inner margin (figure 10, p. 258), fore tarsal tooth well developed (figure 11, p. 258). Metanotum with weakly linear reticulation. Forewing weakly constricted medially; about 12 duplicated cilia present. Pelta elongate triangular; tergites II - VII with two pairs of sigmoid wing-retaining setae; tergite IX setae S1 almost as long as tube.

**Examined Material:** 5 ♀♀ collected by J. P. Agostini, October of 2010, on leaves gall of *Ficus benjamina*, Eldorado, Misiones province.




***Androthrips ramachandrai.***
**8** Antenna. **9** Fore femurs. **10** Detail of tooth and tubercles at inner side of fore femurs. **11** Detalil of tooth of fore tarsus.

## DISCUSSION

Ocurrence of *Gynaikothrips uzeli* and *Androthrips ramachandrai* has been reported recently in different countries of the Americas: Southern USA (1, 9, 10), México (3), Puerto Rico (2), Costa Rica (18) and Colombia (16). Both of these thrips species are native to Southeast Asia, and their introduction and dispersal in America

can be attributed to the horticultural trade in *Ficus benjamina*. *Gynaikothrips uzeli* induces galls on leaves of this plant, and is frequently accompanied by species of the genus *Androthrips*. One species of this genus, *Androthrips flavipes* Schmutz (17), is considered to be a predator, and this is most likely also true of *A. ramachandrai.*

According to reports by Mound and collaborators (14, 15), in Southeast Asian populations *G. uzeli* presents a great variability in the length of the pronotal setae. Although only a limited number of specimens were measured in the present study, a similar a wide range of setal lengths was found (table, p. 271 ). The length of the posteroangulars setae has been used to distinguish different species, and the variation gave rise to doubts about the identity of *G. ficorum* and *G. uzeli*. These two species are distinguished from each other by the short posteroangular setae of *G. ficorum* (less than 50% of the epimeral setae), whereas the posteroangular setae are long in *G. uzeli.*

Unfortunately, any specimens with posteroangular setae near to 50% of the epimerals could be assigned to either of these species. However, the two thrips species seem to have preferences for different host plants. *G. ficorum* usually lives on *Ficus microcarpa*, whereas *G. uzeli* lives on *Ficus benjamina*. This difference in behavior supports the hypothesis that these are distinct species.

In this work, were found only two male specimens of *Gynaikothrips* with short posteroangular setae (0,4 as long as epimeral). This could be attributed to a mixture of both species or a more likely due to a great variations of posteroangular setae in *G. uzeli*. This problem could be solved with rearing studies and a long series of sample collected on individual leaf gall.

In addition to these two species of *Gynaikothrips* from the American continent, Retana (18) described *Gynaikothrips garitacambroneroi*, mainly based on the length of the pronotal setae and the male genitalia. This species was studied and ratified by some researchers (7, 16, 19), but in view of the great morphological similarity to *G. uzeli* and the preference for the same host it was placed in synonymy by Goldazarena *et al*. (8).

## CONCLUSSION

According to morphologic feature observed in examined specimens, and the aforementioned background we conclude that found species correspond to *Gynaikothrips uzeli* and *Androthrips ramachandari* and both are recorded at the first time for Argentina.

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