# FOUR NEW RECORDS OF OAK GALL WASP (HYMENOPTERA: CYNIPIDAE, CYNIPINI) FROM TURKEY

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ABSTRACT: This study was carried out to contribute the oak gall wasps fauna (Hymenoptera: Cynipidae, Cynipini) of Turkey. Oak gall wasp specimens were collected in 2012 and 2013 from Istanbul, Turkey were examined for revealing the oak gall wasp species diversity. Finally four new records of oak gall wasp, *Andricus glandulae* (Hartig, 1840); *Andricus serotinus* (Giraud, 1859); *Cynips longiventris* Hartig, 1840 and *Trigonaspis megaptera* (Panzer, 1801) (Hymenoptera: Cynipidae, Cynipini) from Turkey were recorded. Data on host oak and phenology are given.

KEY WORDS: Cynipidae, Istanbul, new records, oak gall wasps, Turkey.

The Cynipidae is one of the largest families of the Cynipoidea and about 1400 species are known worldwide (Ronquist, 1999). The number of valid species recorded from Europe and contiguous territories including North Africa and Turkey is fewer than 300 (Dalla-Torre & Kieffer, 1910; Nieves-Aldrey, 2001; Stone et al., 2001; Melika, 2006). The western Palearctic contains around 140 species of oak cynipids (Abe et al., 2007).

Initially published studies concern mostly oak gall wasps (tribe Cynipini), as forest pests in Turkey (Fahringer, 1922; Bodenheimer, 1958; Acatay, 1943; Schimitschek, 1944; Alkan, 1952; Karaca, 1956; Çanakçıoğlu, 1956; Baş, 1973; Erdem, 1975).

In the south western of Turkey (Antalya, Burdur, Isparta, Denizli, Aydın, Muğla) 30 species of oak gall wasps (Cynipini) were found (Kıyak et al. 2008). Katılmış & Kıyak (2008) listed 81 gall-inducing wasps (Hymenoptera: Cynipidae), with a new record from Turkey (*Dryocosmus cerriphilus*). Ten galls inducing wasps on oaks were recorded as new to Turkey (Katılmış & Kıyak, 2009a, 2009b; Kıyak & Katılmış, 2010; Katılmış & Kıyak, 2011). Kemal & Koçak (2010) reported 87 gall wasp species with a new record (*Andricus moreae*) in South Van Lake area, Turkey. Mete & Demirsoy (2012) determined 24 species belonging to 5 genera from Kemaliye. Mutun & Dinç (2011) reported 17 oak gall wasps with a new record (*Cynips korsakovi*).

In the last decades, three new oak gallwasp species were described from Turkey: *Andricus askewi* Melika & Stone (Melika & Stone, 2001), *A. megalucidus* Melika (Melika et al., 2004), *A. shuhuti* Melika, Mutun & Dinç (Dinç et al., 2014). Tavakoli et al. (2008) described a new species (*Andricus megatruncicolus* Melika) from Iran and its Turkey distribution (Beybeşli, Erzurum) was mentioned. Additionally, Mutun et al. (2014) described four new species (*Andricus ahmeti*, *A. anatolicus*, *A. bakrachus* and *A. turcicus*) also they listed two new records (*Andricus stonei* and *Aphelonyx kordestanica*) from Turkey.

## MATERIAL AND METHODS

All oak gall specimens were collected from Istanbul in 2012 and 2013. The coordinates and altitudes were recorded using a Garmin 62S model Geographic Positioning System (GPS). After collecting galls they were put in a plastic bag and brought into the laboratory. All oak gall specimens were taken photos. All oak gall specimens are deposited in the Pamukkale University, Faculty of Science & Letters, Department of Biology, Zoology Laboratory, Denizli, Turkey.

## RESULTS

### *Andricus glandulae* (Hartig, 1840)

Material examined: ISTANBUL, Beykoz, Cumhuriyet, 41°07' N, 29°15' E, 27 m, 29.IV.2013, 4 asexual galls; Beykoz, between Mahmutşevketpaşa-Öğümce 2. km, 41°08' N, 29°11' E, 120 m, 21.X.2012, 9 asexual galls; Beykoz, Polonezköy, Polonezköy Nature Park, 41°06' N, 29°11' E, 207 m, 29.IV.2013, 5 asexual galls; Silivri, between Seymen-Sinekli 6. km, 41°12' N, 28°09' E, 227 m, 25.XI.2012, 3 asexual galls; Şile, between Hasanlı-Sarıkavak 1. km, 41°01' N, 29°39' E, 189 m, 24.XI.2012, 6 asexual galls; Şile, between Sortullu-Hacıllı 1. km, Doğan Yuvası Fire Watch-Tower, 41°03' N, 29°43' E, 308 m, 24.XI.2012, 5 asexual galls; Şile, between Yeniköy-Yaylalı 2. km, Yeniköy creek, 41°07' N, 29°40' E, 61 m, 24.XI.2012, 4 asexual galls; Şile, between Yeniköy-Yaylalı 5. km, 41°06' N, 29°40' E, 150 m, 24.XI.2012, 5 asexual galls.

Host oak: *Quercus petraea* and *Quercus robur*.

Phenology: The asexual gall (Fig.1a) develops through the summer, matures in autumn and falls from the tree. At least some of the asexual adults overwinter and emerge the following April (Melika, 2006).

### *Andricus serotinus* (Giraud, 1859)

Material examined: ISTANBUL, Şile, Darlık, surroundings of Darlık cemetery, 41°02' N, 29°34' E, 263 m, 24.XI.2012, 3 asexual galls.

Host oak: *Quercus robur*.

Phenology: The gall (Fig. 1b) matures in the autumn. Some adults emerge the following June (Melika, 2006).

### *Cynips longiventris* Hartig, 1840

Material examined: ISTANBUL, Arnavutköy, Tayakadın, 41°16' N, 28°42' E, 112 m, 21.X.2012, 7 asexual galls; Sarıyer, Bahçeköy, Belgrad Forest, Falih Rıfkı Atay, 41°11' N, 28°57' E, 115 m, 20.X.2012, 3 asexual galls.

Host oak: *Quercus robur*.

Phenology: The asexual generation (Fig. 1c) matures at the end of the summer, and falls with the leaves; the adult emerges in early spring (Melika, 2006).

### *Trigonaspis megaptera* (Panzer, 1801)

Material examined: ISTANBUL, Beykoz, Mahmutşevketpaşa, 41°08' N, 29°11' E, 66 m, 21.X.2012, 13 asexual galls; Beykoz, between Mahmutşevketpaşa-Öğümce 2. km, 41°08' N, 29°11' E, 120 m, 21.X.2012, 18 asexual galls.

Host oak: *Quercus robur*.

Phenology: The asexual gall (Fig. 1d) falls with the leaf, and can be collected from fallen leaves in the spring. Adults emerge in May and June, or after a year's diapause (Melika, 2006).

## DISCUSSION

This study carried out in Istanbul contributed Cynipidae Fauna of Turkey with 4 new records. In this study, 4 species belonging to 3 genus from tribe Cynipini, are recorded first time in Turkey. Now, Cynipidae Fauna of Turkey have got 66

species belonging to genus *Andricus* Hartig and 8 species belonging to genus *Cynips* Linnaeus and 2 species belonging to genus *Trigonaspis* Hartig. We hope that number of species of Turkey cynipid fauna will increase following local faunistic studies in the future.

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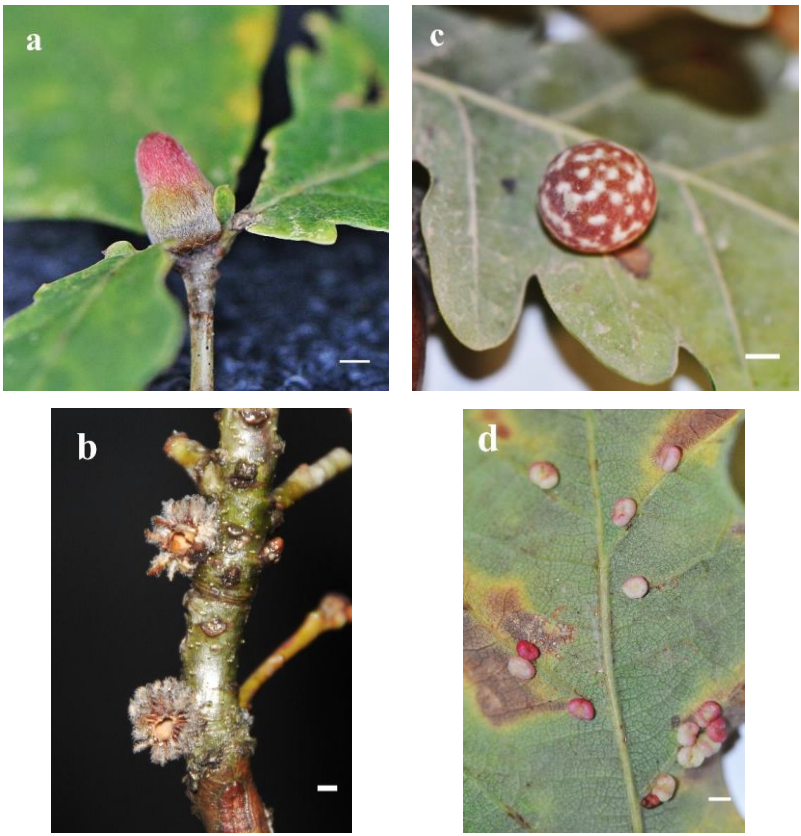


Figure 1. Oak galls (a scale bar 5 mm): a. *Andricus glandulae* asexual gall, b. *A. serotinus* asexual gall, c. *Cynips longiventris* asexual gall, d. *Trigonaspis megaptera* asexual gall.