

## Gall wasps and their associated fauna collected in Greece, with some taxonomic changes and description of a new species (Hymenoptera: Cynipidae, Chalcidoidea)

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Abstract. In several samples from Isle of Corfu and Peloponnesus Peninsula (Greece), 17 species of gall-forming cynipids (including a new species), 8 species of inquiline cynipids and 15 parasites (Chalcidoidea) have been identified. Most part of them (13 gall-inducing, 8 inquiline cynipids and 15 Chalcidoidea) are recorded for the first time in the studied area, increasing the known distribution of some. A new species, *Andricus melikai* n.sp, is also described from continental Greece and *Rhodus oriundus* QUINLAN is synonymized with *Rhodus cyprius* (HOUARD) n. comb. A lectotype for *Andricus lucidus* HARTIG, 1843 is also designated. Taxonomic comments on some species and forms found in Greece are also made.

Key words: Faunistic, taxonomic changes, *Andricus melikai* n. sp.

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### I. INTRODUCTION

Our knowledge of the Greek cynipid gall wasp fauna is very poor and it is summarised in Appendix I. According to KIEFFER (1897-1901) the first species recorded from Corfu (HIERONYMUS 1890) was *Cynips mitrata* MAYR, 1870 (now *Andricus mitratus*). In the same book KIEFFER also mentioned for Greece *Andricus quercuscalicis* (BURGSDORF, 1783) and *Andricus gallaetinctoriae* (OLIVIER, 1791); although "gallaetinctoriae" must be considered as a non-valid name (BELLIDO, MELIKA, ROS-FARRÉ & PUJADE-VILLAR in prep.) and this last species was probably *A. infectorius* (HARTIG, 1843). TROTTER (1903) who has contributed more to the knowledge of Greek galls, added 8 new species and mentioned another 9 additional gall models without identification (see Appendix I). Shortly after, GRAEFFE (1905) described a new species from Greece, *Cynips moreae*. Finally

DALLA TORRE & KIEFER (1910) added the last oak cynipid species recorded from Greece, *Andricus quercustozae* (BOSC, 1792).

There are no previous records about inquilines and gall parasitoids from Greece.

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## II. MATERIAL AND METHODS

The material was collected entirely by the second author, who also determined some of the gall-forming Cynipidae. Reared parasitoids were studied mostly by the third author, and the rest of material was determined by the first and last authors.

Localities where material was collected are shown in the maps of Corfu and Peloponnesus (Fig. 1).

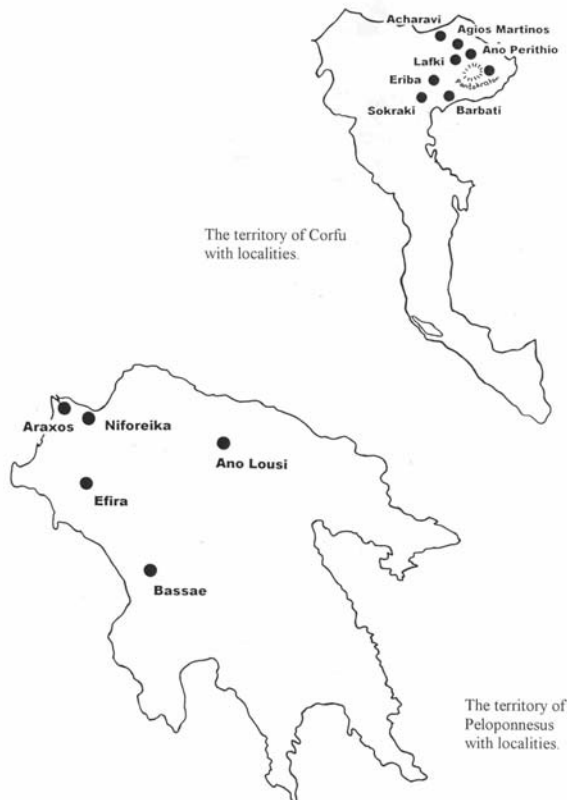


Fig. 1. Localities on Corfu and Peloponnesus where material has been collected.

The SEM photographs of the type material were taken without any coating. The voltage used ranged 500 V. All specimens, mounted on cardboard, have been studied using a stereomicroscope and drawings were made using a camera-lucida.

Type material of *Andricus lucidus* HARTIG, 1843, *Dryocosmus mayri* (MÜLLNER, 1901), *Andricus insana* (WESTWOOD, 1837) and *Andricus moreae* (GRAEFFE, 1905) was examined.

### III. TAXONOMIC PART

#### *Andricus ceconii* KIEFFER, 1901

**M a t e r i a l s t u d i e d.** Ex *Quercus ithaburensis* ssp *macrolepis* (= *aegilops*), Eriba (12.10.1997). Ex *Quercus ithaburensis* ssp *macrolepis*, Araxos (8.05.99) 21-25.05.99: 4♂♂ & 23♀♀; 06.99: 3♂♂ & 10♀♀.

**P a r a s i t e s o b t a i n e d:** *Ormyrus pomaceus*, Araxos, (8.05.99) VI-99: 1♀. *Eupelmus urozonus*, Eriba (12.10.1997) 16.04.98: 1♀; *Aulogymnus gallarum*, Eriba (12.10.1997) 16.04.98: 1♂; *Eurytoma brunniventris*, Eriba (12.10.1997) 16.04.98: 1♂ & 1♀.

This species have previously been collected only in Italy (DALLA TORRE & KIEFFER 1910), Azerbaijan (MAISURADZE 1968), Iran (CHODJAI 1980) and Israel (STERNLICHT 1968). This is a new record from Greece.

#### *Andricus conificus* (HARTIG, 1843)

**M a t e r i a l s t u d i e d.** Ex *Quercus petraea*, Barbati (8.10.1997) 12.3.1999: 3♂♂. Ex *Quercus pubescens*, Bassae (16.8.1999).

**I n q u i l i n e s o b t a i n e d:** *Synergus gallaepomiformis*, Barbati (8.10.1997) 1.08.98: 1♂ & 1♀; Bassae (16.8.1999) 24 and 25.08.99: 3♀♀.

**P a r a s i t e s o b t a i n e d:** *Ormyrus pomaceus*, Barbati (8.10.1997) 03.06.98: 1♀; *Eurytoma brunniventris*, Barbati (8.10.1997) 2.08.98: 1♀.

This species has previously been collected in some European countries, including Greece (TROTTER 1903), and Iran (CHODJAI 1980).

#### *Andricus coriarius* (HARTIG, 1843)

**M a t e r i a l s t u d i e d.** Ex *Quercus pubescens*, Barbati (8.10.1997) 10-19.01.98: 18♂♂.

The specimens collected in Corfu show a greater size (5 mm) when compared with specimens of the type form (3-3.8 mm), widespread in a great part of Europe, or compared with the *lusitanica* form (2.5-2.8 mm) recorded from Spain, Portugal, Italy and Bulgaria (DALLA TORRE & KIEFFER 1910; TAVARES 1931; VASILEVA-SUMNALIEVA 1983). The differences used by KIEFFER (1897-1901) and TAVARES (1931) to define the "*lusitanica*" subspecies fall within intraspecific variability, and thus it was recently synonymized by MELIKA et al. (2000). Moreover, the studied specimens show a greater extension of black marks, greater pubescence and a more conspicuous presence of mesonotal hair punctures, but all these characters can be considered as intraspecific variation because of the greater size of the specimens.

*Andricus coriarius* has a wide distribution; it is present in Central and Southern Europe, North Africa, Tunisia, Azerbaijan and Iran. New record for Greece.

#### *Andricus* nr *insana* (WESTWOOD, 1837)

**M a t e r i a l s t u d i e d.** Ex *Quercus pubescens*, Acharavi (12.10.97) 20.2.98 to 2.3.98: 3♂♂; Ex *Quercus pubescens*, Lafki (9.10.1997) 21.02 to 8.03.98: 8♂♂.

Other material examined. 2 galls from Mayr collection, one of them with following labels: white label "Collect. G. MAYR"; white label "Galle von *Cyn. insana* det. G. MAYR, Tp."; white label "K...o (the meaning of this word is difficult to understand) 852 Griechenland"; white label "Galle von *Cynips insana* Westw. auf Griechenland, det. G. MAYR"; white label "*Andricus insana* (WESTWOOD, 1837) agam. form, PUJADE-VILLAR det. 2000".

Inquilines obtained: *Synergus umbraculus*, Acharavi, (October 1997) 13-04.98: 1♂ & 2♀♀. *Synergus pallicornis*, Acharavi, (October 1997) 1-6.08.98: 1♂ & 1♀. *Leucospis dorsigera*, Acharavi, (October 1997) 19.06.98: 1♂.

Parasites obtained: *Eurytoma brunniventris*, Acharavi (12.10.1997), 29.04.98: 1♀; *Megastigmus stigmatizans*, Acharavi, (12.10.1997) 23.08.98: 1♀.

This interesting species has been collected in Albania, Italy, Palestine, Turkey, Azerbaijan and Iran (MAYR 1901; DALLA TORRE & KIEFFER 1910; MAISURADZE 1968; CHODJAI 1980). This is a new record from Greece; the material from Greece in MAYR's collection has not been published.

Taxonomic comments. WESTWOOD (1837) was the first author to name the gaudy galls of this species (as *Cynips insana*), usually previously treated by many authors (see WESTWOOD 1837 & ELLIOT 1837) under the name of "*Poma sodomitica*", "*Mala insana*" or "apples of the Dead-Sea". Later, other authors also treated this gall but without any reference to WESTWOOD's paper (LAMBERT 1837; FIGDOR 1900). MAYR (1901) made a comprehensive work on the references about this gall in the literature until that moment and he described the gall and agamic female stating that it was not previously described, but this is not true, since WESTWOOD's description is enough to recognize it. For this reason KIEFFER (1902) erroneously reported *Cynips insana* as a species described by MAYR, a mistake corrected in DALLA TORRE & KIEFFER (1910).

Recent genetic studies (GOSC, pers. com.) show that *Andricus insana* (Fig. 2A) and *A. quercustozae* (Fig. 2B) could be the same species or they might represent genetically diverging lines derived from a recent common ancestor and separated by one or more glacial cycles, as for *A. kollari* (STONE et al, in press); MELIKA & BECHTOLT (2001) synonymized them. However our morphological studies show some clear differences between Spanish *A. quercustozae* (collected by J. PUJADE-VILLAR), Greek *A. insana* (coll. E. KWAST) and Turkish *A. insana* (coll. G. STONE) and because of this we restore the specific status of *A. insana*.

Differences of both forms of *A. insana* from Spanish and French *A. quercustozae* are the following:

- Relative length of antennal segments. In Spanish *A. quercustozae* and Greek *A. insana* the first flagellomere is clearly longer than the second while in Turkish specimens of *A. insana* both flagellomeres are similar in length.

- Pedicel. Clearly more elongated in Greek and Turkish *A. insana* while more globular in *A. quercustozae*.

- Pubescence of the propodeal area. Greek and Turkish *A. insana* are strongly pubescent in their propodeal area while *A. quercustozae* is completely smooth and without any pubescence.

- Surface and carina of the propodeum. Both Greek and Turkish *A. insana* have a propodeal carina delimiting a big area with some internal carinae while *A. quercustozae* has a curved propodeal carina delimiting a smaller completely smooth area.

- Metasoma form. In *A. quercustozae* the metasoma is elongated and relatively compressed while in Greek and Turkish forms of *A. insana* it is more circular and less compressed.

- Size. *A. quercustozae* is much smaller than Greek and Turkish forms of *A. insana*.

- Color. It is not a definitive character but it is different in the three forms.

- Turkish specimens of *A. insana* are more robust than Greek ones.

- Radial cell. In Turkish and Greek *A. insana* 2r vein is strongly angled and with a prollongation, longer in Turkish specimens, while in *A. quercustozae* is angled but not prollonged.

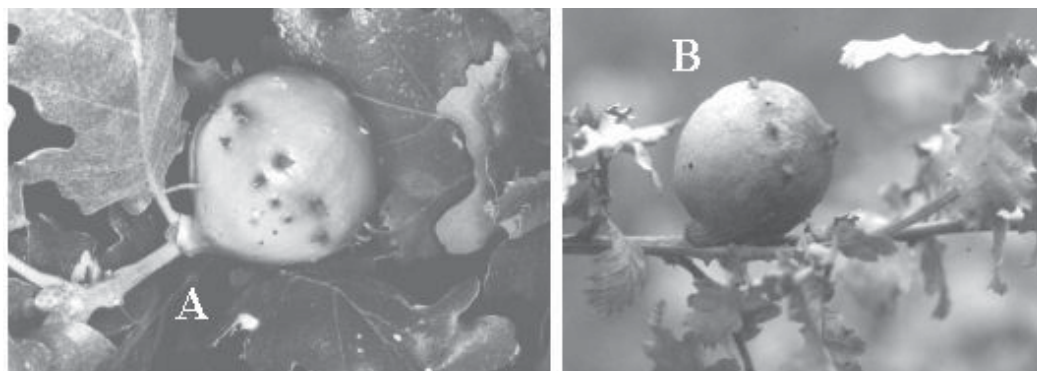


Fig. 2. Galls of the asexual generations of *Andricus insana* (A) and *A. quercustozae* (B).

– Gall. Turkish and Greek galls are viscous during all their development and even when mature while *A. quercustozae* only when young. Moreover the crown is regular in one circle in *A. quercustozae* (Fig. 2B) while in *A. insana* (Fig. 2A) forms is scattered and in several circles.

According to the material obtained, the number of flagellomere segments in *A. insana* is variable (14 or 15).

#### *Andricus lucidus* (HARTIG, 1843)

**Type material:** 4 ♂♂ and 2 galls; HARTIG collection deposited in ZSM. **Lectotype**, labels:., handwriting label with “1b”, pink card “*Cynips lucida* HARTIG DILLER, 1999 Zoologische Staatssammlung München”, red label with “Lectotype” word, white label “*Andricus lucida* (HTG.) PUJADE-VILLAR det-1999”; **paralectotypes**: similar labels but with a black triangle before the first label; galls with a pink and following labels: pink card “*Cynips lucida* HARTIG DILLER, 1999 Zoologische Staatssammlung München”, white label “*Andricus lucida* (Htg.) PUJADE-VILLAR det-1999”.

**Greece material.** Ex *Quercus pubescens*, Barbati (8.10.1997) 11.03.98: 1♂; Ex *Quercus petraea*, Acharavi (12.10.97) 5-11.03.98: 25♂♂; 15-31.03.98: 4♂♂.

**Inquilines obtained:** *Synergus umbraculus*, Archaravi, (12.10.97) 15.05.98: 1♂ & 1♀.

**Parasites obtained:** *Eupelmus annulatus*, Barbati, (8.10.1997) 26.IV.98: 1♀; *Cecidostiba fungosa*, Acharavi (12.10.1997) 7.02.98: 1♀; 1.03.98: 1♀; 13.04.98: 2♂♂ & 1♀; *Ormyrus pomaceus*, Acharavi (10.12.1997) 15.05.98: 3♀♀; *Ormyrus nitidulus*, Barbati, (8.10.1997) 26.04.98: 1♂; *Eurytoma brunniventris*, Acharavi (12.10.1997) 10-13.04.98: 3♀♀; 15-30.04.98: 1♀.

This species has been collected in central Europe, Italy, Albania, Greece (according DALLA TORRE & KIEFFER 1910), Turkey and Iran; introduced in to England (STONE & SUNNUCK 1992).

#### *Andricus* nr *lucidus* (HARTIG, 1843)

**Material studied.** Ex *Quercus pubescens*, Barbati (8.10.1997) 21.02 to 09.03.1998: 45♂♂.

**Parasites obtained:** *Cecidostiba fungosa*, Barbati (8.10.1997) 9.04.98: 1♀; *Megastigmus stigmatizans*, Barbati, (8.10.1997) 9-16.08.98: 5♂♂ & 2♀.

*Andricus lucidus* (Fig. 3A) had a subspecies, *A. lucidus erinaceus* KIEFFER (1897-1901), on the basis of smaller size galls, but this was recently synonymized to *A. lucidus* (MELIKA et al. 2000). In the Corfu material we have some big specimens (5-5.5mm) reared from very big galls with very long, flattened, curved and glued projections (Fig.3B). The adults could not be separated morpho-

logically from the typical form. MELIKA (*com. pers.*) has studied big specimens of this species, collected by G. STONE, from Turkey. It is possible that this big-gall material represents a different species but at this time it is not possible to differentiate them. The life cycles of the 3 gall forms of *A. lucidus* must be elucidated in order to ascertain if these forms represent only intraspecific variation or are sibling species.

***Andricus melikai* PUJADE-VILLAR & KWAST n.sp.**

**Type material.** **Holotype** (female).- Ex *Quercus ithaburensis* ssp *macrolepis* (= *aegilops*). Araxos (Peloponnesus), (8.5.1999) 01.06.99: 1 ♀ in the collection of the University of Barcelona. **Paratypes** (female): (8.5.1999) 01.06.1999: 1 ♀ in collection UB and 02.06.1999: 3 ♀ ♀ in collection E. KWAST, Spremberg, Germany.

**Parasites obtained:** *Ormyrus* nr *pomaceus*, Araxos (8.5.1999) 06.1999: 2 ♀ ♀.

**Derivation nomenis:** To honour of our friend and colleague, George MELIKA.

**Description** of the sexual females

**Length:** 2.5 mm.

**Colour:** Entire body of an amber-brown colour. Wing veins light brown. Distal part of antenna darker.

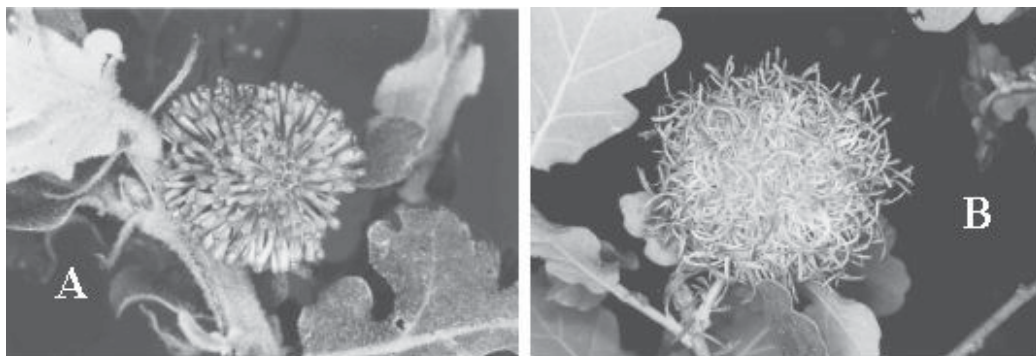


Fig. 3. Galls of *Andricus lucidus* (asexual generation); see comments in the text. (A) Typical gall; (B) gall of *Andricus* nr *lucidus*.

**Head** (Figs 4a, 4b). Robust with short and sparse whitish pubescence and a coriaceous sculpture; in dorsal view around 1.9 times wider than long and 1.28 times wider than high in frontal view. Genae coriaceous, broadened behind compound eyes. POD more or less twice OOD; OOD more or less 1.5 times diameter of lateral ocellus and lateral ocellus diameter more or less equal to COD (ratio POD:OOD:COD:lateral ocellus diameter is 8:4:3:3). Clypeus subquadrate. Face with some very short and weak irradiating striations around clypeus. Transfacial line around 1.8 times compound eye height. Toruli diameter more or less twice their separation and slightly greater than distance between torulus and eye margin.

**Antenna** (Fig. 4C). With 13 segments slightly thicker distally, slightly longer than half body length (0.6 times); pedicel about twice as long as wide; F1 straight, first and second flagellomeres similar in length; following flagellomeres gradually decreasing in length, last flagellomeres longer than wide and F11 as long as F9+F10.

**Mesosoma** (Fig. 4D-F). With strongly coriaceous sculpture, with scarce pubescence in mesoscutum and scutellum. Notaulus complete and deep throughout length, always reaching pronotal margin, posteriorly convergent. Median scutal line conspicuous and long, reaching to at least half length of mesoscutum. Mesopleuron and latero-posterior part of pronotum striated in the mid-

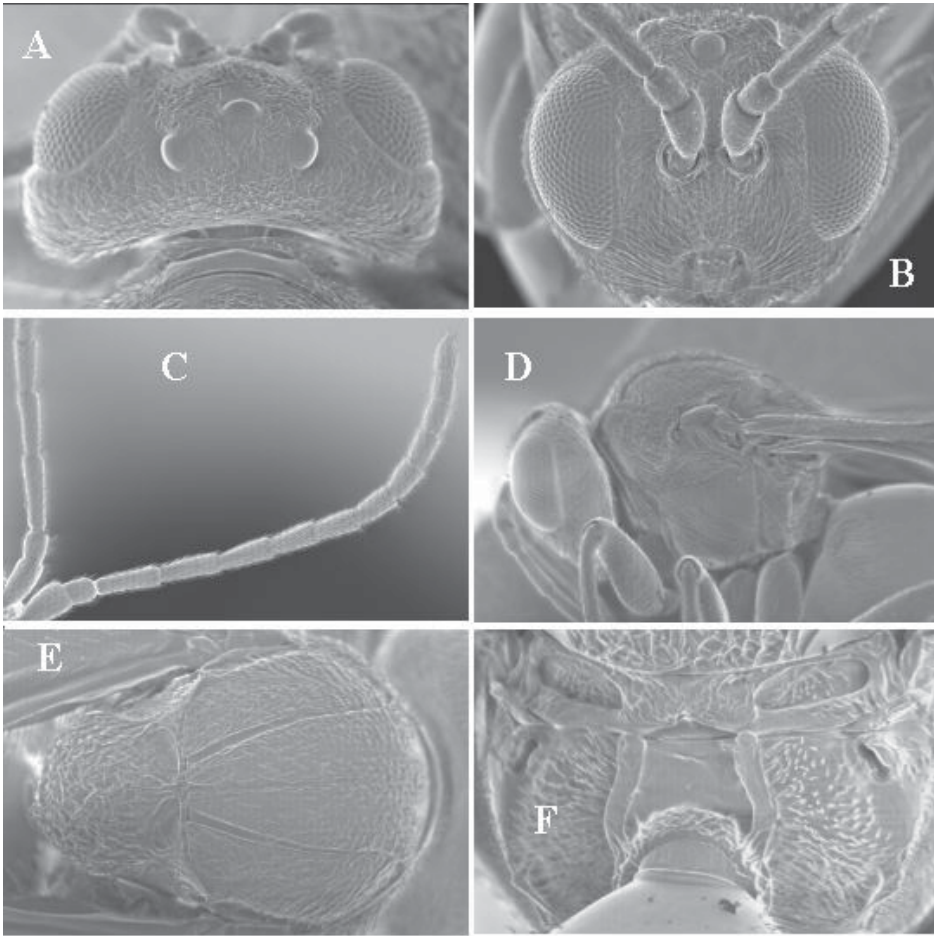


Fig. 4. *Andricus melikai* n. sp. (A) Head in dorsal view, (B) head in frontal view, (C) antenna, (D) lateral view, (E) mesosoma in dorsal view and (F) propodeum.

gle, smooth and shiny elsewhere, except for some hairs. Subquadrate scutellum, only slightly longer than wide, with rugose sculpture, conspicuously margined laterally and not lobed posteriorly. Scutellar foveae oval, with a slightly oblique disposition, alutaceous, shiny and not pubescent within, not delimited posteriorly by a carina and separated from each other by a septum. Lateral carinae of propodeum thin, of a uniform thickness, divergent anteriorly and strongly convergent posteriorly, delimiting a smooth and shiny internal area, not pubescent. Lateral parts of propodeum not pubescent.

**W i n g s** hyaline. Forewing anterior margin with short and scattered setae in its anterior margin; radial cell around 4 times longer than broad; 2r vein angled. Areolet conspicuous.

**L e g s**. Tarsal claws with an acute basal lobe and forming a close angle. Anterior tibiae with short and applied hairs.

**M e t a s o m a**. Slightly shorter than head plus mesosoma together; without pubescence except at the base of the 2<sup>nd</sup> tergite. Second tergite covering between  $\frac{1}{2}$  and  $\frac{3}{4}$  of metasoma in dorsal

view. Hypopygial spine around 6 times longer than wide, with some short and scattered setae not forming an apical tuft.

**G a l l** (Fig. 5): A plurilocular, closed gall, formed by a strong swelling on the leaf veins of *Quercus ithaburensis* ssp. *macrolepis* (= *aegilops*), deforming the leaf and occupying a large part of it. It differs from other *Andricus* leaf galls on its greater size (15 mm) and plurilocular nature.

**D i a g n o s i s**: The adult is very close to *A. multiplicatus*, but differs in the first flagellomere which is curved in *A. multiplicatus* and straight in *A. melikai*, the pubescence of mesoscutum (more conspicuous in *A. melikai*), and gall form. The gall of this new sexual form is also very similar to the American species *Andricus quercuspetiolitica* (BASSET) according to DALLA TORRE & KIEFFER (1910) drawing. Leaf galls of other species are very different in form and because they are unilocular, like *A. crispator* (= *A. adleri*) (= *A. buyssoni*), recently synonymized in MELIKA et al. (2000), and their adults are morphologically very different. *Andricus zappellai* KIEFFER, 1902 also with plurilocular galls has a very different gall shape and the propodeal carinae are straight as KIEFFER mentioned in his description (in *A. melikai* they are divergent and curved inferiorly).

**D i s t r i b u t i o n**: Only known from Greece.

**C o m m e n t s**: The small number of specimens we have (5 females) makes it difficult to resolve whether *A. melikai* n.sp. is a sexual or an agamic form. The genae broadened behind the compound eyes is normally a character present in agamic females, but it is also present in some sexual forms (like *A. multiplicatus*), but the gall (on leaf) and the season of gall apparition (April-May) induces us to think that we have a sexual form.

***Andricus panteli* KIEFFER, 1896**

**M a t e r i a l s t u d i e d**. Ex *Quercus pubescens*, Acharavi (12.10.1997); eastern mount Pantokrator (8.5.1998).

**P a r a s i t e s o b t a i n e d**: *Ormyrus nitidulus*, Acharavi, (12.10.1997), 1.08.98: 1♂.

*Andricus mayri* (WACHTL) and *Andricus panteli* (KIEFFER, 1896:370) are considered as different species in terms of galls localisation (MELIKA et al., 2000; PUJADE-VILLAR & MELIKA 2002), and several subspecies have been recently invalidated (MELIKA et al. 2000).

This is a new record from Greece.



Fig. 5. Gall of *Andricus melikai* n. sp. on a leaf of *Q. ithaburensis* ssp. *macrolepis*.



***Andricus solitarius*** (BOYER DE FONSCOLOMBE, 1832)(= *Andricus vilarrubiae* TAVARES, 1930)

**M a t e r i a l s t u d i e d.** Ex *Quercus pubescens*, Barbati (8.10.1997) 04 and 06.11.97: 2♂♂, gall included in *A. coriarius* gall.

Specimens of *A. solitarius* reared from inconspicuous galls inside *A. coriarius* galls, named *Andricus vilarrubiae*, were recently synonymized by PUJADE-VILLAR et al. (2000).

This species has a wide distribution. It is present in all of Europe as far as Azerbaijan, North Africa and Iran. This species has not been previously collected in Greece.

***Andricus tomentosa*** (TROTTER, 1901)

**M a t e r i a l s t u d i e d.** Ex *Quercus pubescens*, Barbati (8.10.1997) 9.10.1997: 1♂; Ano Perithio (9.10.1997) 5-18.3.1998: 8♂♂; Lafki (6.5.1998).

**I n q u i l i n e s o b t a i n e d:** *Synergus hayneanus*; Lafki, (6.5.1998) 6-16.08.98: 1♂ & 1♀

**P a r a s i t e s o b t a i n e d:** *Ormyrus nitidulus*, Ano Perithia (9.10.1997) 16.05.98: 1♀; eastern mount Pontokrator (8.5.1998) 17.08.98: 1♀.

This species has been recorded from Dalmatia (littoral margin of former Yugoslavia), Rumania, Hungary, Greece and Turkey; also recorded from Corfu (HIERONYMUS 1890; TROTTER 1901).

***Biorhiza pallida*** (OLIVIER, 1791)

**M a t e r i a l s t u d i e d** (only sexual form). Ex *Quercus petraea*, Barbati (8.10.97).

**P a r a s i t e s o b t a i n e d.** *Aulogymnus skianeuros*, Barbati (8.10.1997) 23.03.98: 1♂.

Species widely distributed in Western Palaearctic and recorded from Greece by TROTTER (1903).

***Callirhytis rufescens*** (MAYR, 1882)

**M a t e r i a l s t u d i e d.** Ex *Quercus* sp., Niforeika 15.08.99 (in cobweb): 1♂.

This species has a circum-mediterranean distribution (see NIEVES-ALDREY 1992) but it is only collected in the European area; it has been recorded in Greece by WELD (1939).

***Chilaspis mayri*** (MÜLLNER, 1901)

**M a t e r i a l s t u d i e d.** Ex *Quercus ithaburensis* ssp *macrolepis* (= *aegilops*), Acharavi (2.5.1998) 6-8.05.1998: 4 ♂♂ & 8 ♀♀ (material deposited in KWAIST collection except a gall, 2 males and 3 females in Barcelona University).

*Dryocosmus mayri* has recently been transferred to *Chilaspis* (PUJADE-VILLAR et al. 2002). This species was recorded from Austria (MÜLLNER, 1901) on *Quercus cerris*, from Hungary on *Quercus* sp. (see MELIKA & BECHTOLD 1999) and from Greece (this paper) on *Quercus ithaburensis* ssp. *macrolepis* (= *aegilops*). Type specimens, collected in Austria, are darker than our specimens collected in Corfu, which are ambarine or amber-brown. The scutellum ranges from smooth in some lighter individuals to weakly sculptured on all its surface in some females of the type series, but never rough as mentioned by KIEFFER (1902). Propodeal carinae are variable in form between specimens.

***Cynips quercus*** (FOURCROY, 1785)

**M a t e r i a l s t u d i e d.** Ex *Quercus pubescens*, Efira (15.8.1999).

**I n q u i l i n e s o b t a i n e d:** *Synergus albipes*, Efira, (15.8.1999) 01.09.99: 2♀♀

**P a r a s i t e s o b t a i n e d:** *Torymus cyaneus*, Efira, (15.8.1999) 26.8.99: 1♀.

This species has been collected in a large number of countries of the occidental Palaearctic region. It has not previously been recorded in Greece.

***Diplolepis rosae* (LINNAEUS, 1758)**

**M a t e r i a l s t u d i e d.** Ex *Rosa* sp., Ano Lousi, (19.8.1999) 21.5.2000: 5♂♂ & 6♀♀.

**P a r a s i t e s o b t a i n e d:** *Torymus bedeguaris*, Ano Lousi, (15.8.1999) 02.09.99: 1♂ & 1♀.

Species of Palaearctic distribution, introduced to North America (see PUJADE-VILLAR 1993), not previously recorded from Greece.

***Neuroterus lanuginosa* GIRAUD, 1859**

**M a t e r i a l s t u d i e d.** Ex *Quercus ithaburensis* ssp. *macrolepis* (= *aegilops*), Acharavi (12.10.1997) 9-25.3.1998: 7♂♂.

**I n q u i l i n e s o b t a i n e d:** *Synergus rotundiventris*, Acharavi, (12.10.1997) 24.04.98: 1♂.

**P a r a s i t e s o b t a i n e d:** *Sycophila biguttata* (SWED.), Acharavi (12.10.1997) 25.10.97: 1♀; *Ormyrus pomaceus*, Acharavi, (12.10.1997) 15-26.04.98: 2♂♂.

This species has been collected in Italy, Sicily, Central Europe as far as Azerbaijan, Turkey, Israel and Iran. TROTTER (1903) recorded an unidentified species (n° 114) of *Neuroterus* similar to *N. lanuginosus* from Peloponnesus but he was not able to assign the gall to any known species. Therefore this is the first certain record from Greece.

***Plagiotrochus panteli* PUJADE-VILLAR, 1995**

**M a t e r i a l s t u d i e d.** Ex *Quercus coccifera*, Archaravi (2.5.1998); near Barbati (10.10.1997).

**I n q u i l i n e s o b t a i n e d:** *Synergus plagiotrochi*, Corfu near Barbati (10.10.1997) 28-29.04.98: 3♂♂ & 3♀♀; *Synergus* nr *physocerus*, Corfu near Barbati (10.10.1997) 20-30.05.98: 1♂ & 1♀.

**P a r a s i t e s o b t a i n e d:** *Sycophila variegata*, Acharavi (2.5.1998) 1.06.98: 1 specimen (KWAIST leg).

This species is known from France and Spain (PUJADE-VILLAR 1991) and probably is also present in Morocco (according to drawings in MIMEUR 1949). The most likely distribution of *P. panteli* is the circum-mediterranean area considering the material from Corfu recorded in this paper.

Rearing of *Synergus* nr *physocerus* from this type of gall is very interesting because up to now this species has been recorded only from agamic galls of *Trigonaspis synaspis* and *Cynips quercus-folii*. We do not discount the possibility that the specimens of this rare species reared from *Plagiotrochus* galls may be a new species.

***Plagiotrochus kiefferianus* TAVARES, 1901**

**M a t e r i a l s t u d i e d.** Ex *Quercus coccifera*, Lafki (9.10.1997) 5-10.4.1998: 14♂♂; Sokraki (5.5.1998); Agios Martinos (5.5.1998).

**I n q u i l i n e s o b t a i n e d:** *Synergus* nr *physocerus*, Sokraki (5.5.1998) 15.05.98: 1♀; Agios Martinos (5.5.1998) 14-15.05.98: 2♂♂ & 1♀; Lafki (9.10.1997) 23.05.98: 1♂ & 1♀.

**P a r a s i t e s o b t a i n e d:** *Sycophila flavicollis*, Sokraki (5.5.1998) 23.05.98: 1♀; *Sycophila binotata*, Sokraki (5.5.1998) 23.05.98: 1♀.

This agamic form has been recorded from Portugal, Spain, France, Italy, Morocco, Azerbaijan, Israel and Iran (DALLA TORRE & KIEFFER 1910; MIMEUR 1949; STERNLICHT 1968; MAISURADZE

1968; CHODJAI 1980). TROTTER (1903) mentioned an unidentified species of *Neuroterus* on *Quercus coccifera* (n° 123) from Corfu that certainly belongs to *Plagiotrochus kiefferianus*. This species is considered by different authors, and recently by MELIKA & BECHTOLD (2001), as the agamic form of *P. quercusilicis* and therefore as its synonym, but this cycle has never been shown experimentally. For this reason we prefer to consider these generations as different species until the confirmation of the cycle, so we restore the specific status of *P. kiefferianus*.

See comment on *Synergus* nr *physocerus* under *Plagiotrochus panteli*.

***Rhodus cyprius* (HOUARD, 1919) n. comb.**

*Diastrophus cyprius* HOUARD, 1919: 40-41

*Rhodites cyprius* GIRAUD (*in litera*); PUJADE-VILLAR, 1997: 284-285

*Rhodus oriundus* QUINLAN, 1968 n. syn.

**M a t e r i a l s t u d i e d.** Only galls on *Salvia* sp. (probably *S. pomifera* or *S. triloba*), Lafki (3.5.1998).

*Rhodus oriundus* was described from material collected on Rhodes. PUJADE-VILLAR (1997) studied material of this species in GIRAUD's collection, named by this author as *Rhodites cyprius*, and stated that this species was not published by GIRAUD. HOUARD (1909) didn't name this species although in his handwritten manuscript it was recorded as *Diastrophus cyprius*. Later, HOUARD (1919), wrote about GIRAUD's gall collection and described the gall of *Diastrophus cyprius* GIRAUD; this species had been mentioned without name in HOUARD (1909) and previously by different authors (see HOUARD 1909). According to the International Code of Zoological Nomenclature (4<sup>th</sup> edition, articles 1.3.6, 12.2.8, 23.3.2.3, 72.5.1) a species description on the basis of galls only is valid if published before 31.12.1930; for this reason the correct name of this species is *Rhodus cyprius* and the type material is the galls deposited in Musée National de l'Histoire Naturelle of Paris.

This species has an eastern Mediterranean distribution. According to the bibliography mentioned above, *Rhodus cyprius* (= *R. oriundus* n. syn.) has been collected in Syria, Cyprus, Palestine and Greece; in Greece it is found on the Isle of Crete, Rhodes, Corfu (new record) and on peninsular Greece (record mentioned in PUJADE-VILLAR, 1997, SKUHRAVÁ leg).

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## Appendix 1

Summary of Greek gall-wasp species. C: Corfu, G: Peninsular Greece and P: Peloponnesus.

Cynipid species	Reference	Record	Comments
<b>Andricus</b>			
<i>A. ceconii</i> KIEFFER, 1901	herein recorded	C/P	
<i>A. conificus</i> (HARTIG, 1843)	TROTTER, 1903:54-55 and herein recorded	C/G/P	C and P new records
<i>A. coriarius</i> (HARTIG, 1843)	herein recorded	C	
<i>A. coronatus</i> (GIRAUD, 1859)	TROTTER, 1903: 55	G	
<i>A. infectorius?</i> (HARTIG, 1843)	KIEFFER, 1897: 566-7	G	Determined in KIEFFER as <i>A. gallaetinctoriae</i> (OLIVIER, 1971)
<i>A. insana?</i> (WESTWOOD, 1837)	herein recorded	C	
<i>A. kollari</i> (HARTIG, 1843)	TROTTER, 1903: 56-57	G	
<i>A. lucidus</i> (HARTIG, 1843)	TROTTER, 1903: 54 and herein recorded	C/G	C new record
<i>A. melikai</i> n. sp.	herein described	P	
<i>A. moreae</i> (GRAEFFE, 1905)	GRAEFFE, 1905: 372	G	
<i>A. mitratus?</i> (MAYR, 1851)	HIERONYMUS, 1890	C	According KIEFFER (1897:537-9); see TROTTER (1903: 63)
<i>A. panteli</i> KUEFFER, 1896	herein recorded	C	
<i>A. quercustozae</i> (BOSC, 1792)	DALLA TORRE & KIEFFER, 1910: 434-5	G	
<i>A. solitarius</i> (B. DE FONSCOLOMBE, 1832)	herein recorded	C	
<i>A. tomentosa</i> (TROTTER, 1901)	TROTTER, 1903:62-63 and herein recorded	G/C	
<i>A. quercuscalicis</i> (BURGSDORF, 1793)	KIEFFER, 1897: 545-7	G	
<i>Andricus</i> sp	TROTTER, 1903: 42	G	
<b>Biorhiza</b>			
<i>B. pallida</i> (OLIVIER, 1791)	TROTTER, 1903: 53 and herein recorded	C/G	C new record
<b>Callirhytis</b>			
<i>C. rufescens</i> (MAYR, 1882)	herein recorded	P	
<b>Chilaspis</b>			
<i>Ch. mayri</i> (MÜLLNER, 1901)	herein recorded	C	
<b>Cynips</b>			
<i>C. quercus</i> (FOURCROY, 1785)	herein recorded	P	
<b>Diplolepis</b>			
<i>D. rosae</i> (LINNAEUS, 1758)	herein recorded	P	
<b>Neuroterus</b>			
<i>N. albipes</i> (SCHENCK, 1863)	TROTTER, 1903: 66-67	G	
<i>N. quercusbaccarum</i> (LINNAEUS, 1858)	TROTTER, 1903: 67-68	G	
<i>Neuroterus</i> nr. <i>saltans</i>	TROTTER, 1903: 43	G	Recorded as <i>Neuroterus</i> sp. by TROTTER
<i>N. lanuginosus</i> GIRAUD, 1859	TROTTER, 1903: 44 and herein recorded	C/P	Recorded as <i>Neuroterus</i> sp. by TROTTER C new record
<i>N. tricolor</i> (HARTIG, 1841)	TROTTER, 1903: 68	G	
<b>Plagiotrochus</b>			
<i>P. kiefferianus</i> TAVARES, 1901	TROTTER, 1903: p.47 and herein recorded	G/C	Recorded as <i>Neuroterus</i> sp. by TROTTER in <i>Q. coccifera</i>
<i>P. panteli</i> PUJADE-VILLAR, 1995	herein recorded	C	

<i>P. quercusilicis</i> (FABRICIUS, 1798)	TROTTER, 1903: p.47	G/C	Recorded as <i>P. cocci ferae</i> MAYR, 1881 by TROTTER
<i>P. coriaceus?</i> (MAYR, 1882)	TROTTER, 1903: 46-47	G/C	Recorded as <i>Andricus</i> sp. on <i>Q. coccifera</i> by TROTTER
<i>P. cardiguensis?</i> (TAVARES, 1930)	TROTTER, 1903: 46	G	Recorded as <i>Andricus</i> sp. on <i>Q. coccifera</i> by TROTTER
<b>Rhodus</b>			
<i>R. cyprius</i> (HOUARD, 1919) n. comb.	PUJADE-VILLAR (1997) and herein recorded C/G	C	new record
<b>Undetermined species:</b>			
Cynipidae	TROTTER, 1903: 46	C	in <i>Q. coccifera</i>
Cynipidae	TROTTER, 1903: 46	G	in <i>Q. coccifera</i>