

**The cynipid wasp collection  
of Gyula Méhes (Hymenoptera: Cynipidae)**

G. MELIKA & M. BECHTOLD

*Systematic Parasitoid Laboratory, Vas County Plant Health and Soil Conservation Station  
H-9730 Kőszeg, Kelcz-Adelffy u. 6, Hungary  
e-mail: chalcini@savaria.hu*

MELIKA, G. & BECHTOLD, M. (1999): The cynipid wasp collection of Gyula Méhes (Hymenoptera: Cynipidae). – *Annls hist.-nat. Mus. natn. hung.* **91**: 199–204.

**Abstract** – In 1998–99 the adult cynipid wasp collection of Dr. GYULA MÉHES deposited at the Hungarian Natural History Museum in 1954 was elaborated. 4355 specimens of cynipid gall wasps were mounted belonging to 55 species of 8 genera. 1495 specimens of cynipid inquilines were prepared and identified to be 14 species of 4 genera. The material was reared by MÉHES from galls he collected from 70 sites in Hungary.

Dr. GYULA MÉHES was among the first researchers who studied the Hungarian cynipid wasp fauna over the long period of 1917–1961. He published several articles on cynipid gall-inducing wasps, especially that of Hungary (MÉHES 1922, 1937, 1939, 1943, 1953, 1955), describing 7 new species from Hungary and Italy (MÉHES 1953). He planned a monographic work on the cynipid gall wasps fauna of Hungary, however, his early death in 1961 failed it. The larger part of the collected material and the results of his research were not published. His cynipid collection was deposited at the Hungarian Natural History Museum in Budapest in 1954. BÉLA AMBRUS analyzed the gall collection of MÉHES and published a list of cynipid gall wasps for Hungary (AMBRUS 1969). However, nobody yet treated the MÉHES material on adult cynipid wasps which he reared from galls. Wasps were preserved dry or in 75% ethanol. During 1998–1999 we mounted all the cynipid wasps from the MÉHES collection, checked his species' determinations, and herein we give a brief analysis on the cynipid species he found in Hungary. Species diversity of cynipid wasps given by us is based on reared adult wasps only, and, thus differs from that given by AMBRUS (1969). Nomenclature changes in the classification of cynipid wasps since AMBRUS's publication, also influence species numbers in two checklists.

It is important to mention that in the MÉHES collection there is a large number of parasitoids reared from different cynipid galls. However, in this paper we analyze the cynipid wasp collection only.

Some general information on the MÉHES cynipid collection is given below. The first column shows numbers based on reared adult wasps analysed by us, while the second is based on the collected galls (AMBRUS 1969).

Collecting sites	70	140
Genera of host plants	2	8
Adult wasps reared, total	5850	–
reared gall wasps	4355	–
reared inquilines	1495	–
Collected galls, total	–	nr. 6000
Number of genera, total	12	16
gall wasps	8	16
inquilines	4	–
Number of species, total	69	106
gall wasps	55	106
inquilines	14	–

Adult wasps were reared by MÉHES from galls collected from 70 sites throughout the territory of Hungary: Badacsony, Bagolyvár (Budapest), Balatonfüred, Balatonkenese, Bánkút, Bélatelep, Bükk Mts., Csákvár, Csepel, Dobogókő, Farkasvölgy, Felsőbabad (Ócsa), Felsőderecske, Galyatető, Gellért-hegy (Budapest), Gerecse, Gézaháza, Gyopár-forrás (Pomáz), Göd, Gödöllő, Gugger-hegy (Budapest), Gyöngyös, Hármashatár-hegy (Budapest), Hárshegy (Budapest), Hűvösvölgy (Budapest), Irhás-árok, Kakukk-hegy, Kamara-erdő (Budapest), Kaposvár, Karátföld (Gersekarát), Kendig (Kőszeg), Keszölc, Kács, Kő-árok (Bakony), Körmend, Klotildliget (Piliscsaba), Margit-park, Margitsziget (Budapest), Máriabesnyő (Gödöllő), Máriaremete, Mátramindszent, Mecsek Mts., Mernye, Mogyoróskert, Nadap, Nagykovácsi, Nagykőrös, Nemesdéd, Népliget (Budapest), Nógrádverőce, Ördög-szikla, Ötházhuta, Pestújhely, Pomáz, Rákóczi-forrás, Révfülöp, Rupp-hegy, Sas-hegy, Somogyeszi, Szamosvár, Szombathely, Szuhahuta, Tabán-park (Budapest), Tiszadob, Vadaskert, Vasvár, Vár-kút (Bükk), Visegrád, Zsíros-hegy, Zugliget (Budapest). In the MÉHES collection there are also some wasps reared from galls, collected from a few sites in Austria, Romania, Slovakia, Yugoslavia, and Italy, which are not listed above.

AMBRUS (1969) cited 106 collecting sites where from galls were collected by MÉHES. The number of sites given by us for adult wasps is much lower which can be explained by the fact that adult wasps were not reared from all collecting sites.

Species from eight genera of gall inducing wasps were reared by MÉHES: representatives of 7 genera are oak gall wasps collected from *Quercus cerris* L., *Q. pubescens* WILLD., *Q. robur* L. (= *pedunculata* EHRH.), *Q. petraea* (MATTUSCHKA) LIEBLEIN (= *sessiflora* SALISB.); and one species, *Diplolepis rosae* (LINNAEUS) was collected from *Rosa* spp. Species numbers from each genera, host plant genera names and number of reared wasps are given in Table 1. The last includes also data based on the MÉHES gall collection (AMBRUS 1969).

Several genera, especially those from tribe Aylacini were represented in the MÉHES collection only by galls (Table 1). We found no adults from tribe Aylacini in MÉHES collection.

Below we give a species list of cynipid gall wasps we found in the MÉHES collection. Numbers after each species show specimens' number reared by MÉHES.

*Quercus* LINNAEUS, 1758

*Andricus* HARTIG, 1840: *A. aestivalis* GIRAUD, 1859, bisex. gen.: 483; *A. ambiguus* (TROTTER, 1899), unisex. gen.: 51; *A. amblycerus* (GIRAUD, 1859), unisex. gen.: 2; *A. aries* (GIRAUD, 1859), unisex. gen.: 9; *A. caliciformis* (GIRAUD, 1859), unisex. gen.: 6; *A. callidoma* (HARTIG, 1841), unisex. gen.: 4; *A. caputmedusae* (HARTIG, 1843), unisex. gen.: 8; *A. conglomeratus* (GIRAUD, 1859), unisex. gen.: 7; *A. coriarius* (HARTIG, 1843), unisex. gen.: 7; *A. coronatus* (GIRAUD, 1859), unisex. gen.: 12; *A. corruptrix* (SCHLECHTENDAL, 1870), unisex. gen.: 6; *A. crispator* TSCHEK, 1871, bisex. gen.: 79; *A. curator*

**Table 1.** Cynipid gall wasps in the MÉHES collection

Cynipidae genus	Host plant	Species number		Number of wasps
		Adults	Galls	
<i>Andricus</i>	<i>Quercus</i>	39	65	3001
<i>Aphelonyx</i>	<i>Quercus</i>	–	1	–
<i>Aulacidea</i>	<i>Hieracium, Hypochoeridis, Scorzonera</i>	–	3	–
<i>Biorhiza</i>	<i>Quercus</i>	1	1	968
<i>Callirhytis</i>	<i>Quercus</i>	–	1	–
<i>Chilaspis</i>	<i>Quercus</i>	–	1	–
<i>Cynips</i>	<i>Quercus</i>	6	8	168
<i>Diastrophus</i>	<i>Potentilla, Rubus</i>	–	2	–
<i>Diplolepis</i>	<i>Rosa</i>	1	3	91
<i>Dryocosmus</i>	<i>Quercus</i>	1	3	9
<i>Isocolus</i>	<i>Centaurea</i>	–	1	–
<i>Neuroterus</i>	<i>Quercus</i>	5	13	80
<i>Phanacis</i>	<i>Centaurea</i>	–	1	–
<i>Plagiotrochus</i>	<i>Quercus</i>	–	1	–
<i>Synophrus</i>	<i>Quercus</i>	1	1	32
<i>Trigonaspis</i>	<i>Quercus</i>	1	1	6
		55	106	4355

HARTIG, 1840, bisex. gen.: 17; *A. galeatus* (GIRAUD, 1859), unisex. gen.: 2; *A. gal-laetinctoriae* (OLIVIER, 1791), unisex. gen., (= *tinctoriusnostrus*, (STEFANI, 1886) (MELI-KA & CSÓKA 1999, in press): 433; *A. giraudianus* DALLA TORRE et KIEFFER, 1910, bisex. gen., (= *amenti* GIRAUD, 1859): 109; *A. glutinosus* (GIRAUD, 1859), unisex. gen.: 7; *A. grossulariae* GIRAUD, 1859, bisex. gen.: 140; *A. hungaricus* (HARTIG, 1843), unisex. gen.: 11; *A. hystrix* TROTTER, 1899, unisex. gen.: 20; *A. inflator* HARTIG, 1840, unisex. gen.: 2, bisex. gen.: 7; *A. kollari* (HARTIG, 1843), unisex. gen.: 35; *A. lignicolus* (HARTIG, 1840), unisex. gen.: 178; *A. lucidus* (HARTIG, 1843), unisex. gen.: 352; *A. mi-tratus* (MAYR, 1870), unisex. gen.: 11; *A. multiplicatus* GIRAUD, 1859, bisex. gen.: 5; *A. polycerus subteraneus* GIRAUD, 1859, unisex. gen.: 4; *A. quadrilineatus* HARTIG, 1840, unisex. gen.: 10, *A. quercuscalicis* (BURGSDORF, 1783), unisex. gen.: 31, bisex. gen.: 233; *A. quercuscorticis* (LINNAEUS, 1761), bisex. gen.: 32; *A. quercusramuli* (LINNAEUS, 1761), bisex. gen.: 446; *A. schroeckingeri* WACHTL, 1876, bisex. gen.: 24, *A. seckendorffi* (WACHTL, 1879), unisex. gen.: 11; *A. serotinus* (GIRAUD, 1859), unisex. gen.: 3; *A. sieboldi* (HARTIG, 1843), unisex. gen.: 2; *A. singulus* MAYR, 1870, bisex. gen.: 31; *A. superfetationis* (GIRAUD, 1859), unisex. gen.: 1; *A. truncicola* (GIRAUD, 1859), unisex. gen.: 1; *Andricus* spp.: 200.

*Biorhiza* WESTWOOD, 1840: *B. pallida* (OLIVIER, 1791), unisex. gen.: 968.

*Cynips* LINNAEUS, 1758: *C. agama* HARTIG, 1840, unisex. gen.: 5, *C. cornifex* HARTIG, 1843, unisex. gen.: 32, *C. disticha* HARTIG, 1840, unisex. gen.: 3; *C. longiventris* HARTIG, 1840, unisex. gen.: 6; *C. quercus* (GEOFFROY in FOURCROY, 1785), unisex. gen.: 31; *C. quercusfolii* (LINNAEUS, 1758), unisex. gen.: 88; *Cynips* spp.: 3.

*Dryocosmus* GIRAUD, 1859: *D. mayri* MUELLNER, 1901, bisex. gen.: 9.

*Neuroterus* HARTIG, 1840: *N. anthracina* (CURTIS, 1838), unisex. gen. (= *Andricus anthracina* (CURTIS), = *A. ostreus* (MAYR, 1882) (PUJADE-VILLAR *et al.* 1998): 2; *N. laeviusculus* SCHENCK, 1863, unisex. gen.: 2; *N. macropterus* (HARTIG, 1843), unisex. gen.: 16; *N. politus* HARTIG, 1840, bisex. gen., (= *Spathegaster aprilinus* GIRAUD, 1859) (PUJADE-VILLAR & ROS-FARRÉ 1999): 17; *N. quercusbaccarum* (LINNAEUS, 1758), unisex. gen.: 8; *N. saliens* (KOLLAR, 1857), bisex. gen., (= *Spathegaster glandiformis* GIRAUD, 1859): 32; *Neuroterus* spp.: 3.

*Synophrus* HARTIG, 1843: *S. politus* HARTIG, 1843, bisex. gen.: 32.

*Trigonaspis* HARTIG, 1840: *T. synaspis* (HARTIG, 1841), unisex. gen.: 6.

*Rosa* LINNAEUS, 1758

*Diplolepis* GEOFFROY, 1762: *D. rosae* (LINNAEUS, 1785): 91.

Large series of inquiline cynipid wasps were reared by MÉHES from galls. Numbers of inquiline genera and species we found in the MÉHES wasp collection are given in Table 2.

Nine species of *Synergus* HARTIG, 1840 were reared by MÉHES: *S. umbraculus* (OLIVIER, 1791), *S. pallidipennis* MAYR, 1872, *S. crassicornis* (CURTIS, 1838), *S. rotundiventris* MAYR, 1873, *S. gallaepomiformis* (BOYER DE FONSCOLOMBE, 1832), *S. incras-satus* HARTIG, 1840, *S. thaumocerus* (DALMAN, 1823), *S. pallicornis* HARTIG, 1841, and *S. nervosus* HARTIG, 1840; one species of *Saphonecrus* DALLA TORRE & KIEFFER, 1910 – *S. undulatus* (MAYR, 1872); two species of *Ceroptres* HARTIG, 1840 – *C. clavicornis*

Table 2. Cynipid inquilines in the MÉHES collection

Genus	Species number	Host		Number of adults
		Genus	Species	
<i>Ceroptres</i>	2	<i>Andricus</i>	7	94
		<i>Aphelonyx</i>	1	
		<i>Neuroterus</i>	1	
<i>Saphonecrus</i>	1	<i>Andricus</i>	1	33
		<i>Aphelonyx</i>	1	
<i>Synergus</i>	9	<i>Andricus</i>	31	1326
		<i>Aphelonyx</i>	1	
		<i>Cynips</i>	3	
		<i>Biorhiza</i>	1	
		<i>Neuroterus</i>	4	
<i>Periclistus</i>	2	<i>Diplolepis</i>	1	42
Total	14	6	52	1495

HARTIG, 1840 (= *C. arator* (HARTIG), *C. cerris* MAYR, 1872; and two species of *Periclistus* FOERSTER, 1869 reared from *Diplolepis rosae*: *P. brandtii* (RATZEBURG, 1831) and *P. caninae* (HARTIG, 1840). *Synergus* species were reared from the following cynipid hosts: *Andricus ambiguus*, *A. aries*, *A. callidoma*, *A. caputmedusae*, *A. conglomeratus*, *A. conficus*, *A. coronatus*, *A. coriarius*, *A. corruptrix*, *A. curator*, *A. gallaetinctoriae*, *A. gallaeurnaeformis*, *A. giraudianus*, *A. glandulae*, *A. glutinosus*, *A. grossulariae*, *A. hartigi*, *A. hungaricus*, *A. hystrix*, *A. kollari*, *A. lignicolus*, *A. lucidus*, *A. mayri*, *A. multiplicatus*, *A. mitratus*, *A. paradoxus*, *A. quercuscalicis*, *A. quercusradicis*, *A. quercusramuli*, *A. quercustosae*, *A. seckendorffi*, *A. sieboldi*, *A. solitarius*, *A. superfetationis*; *Aphelonyx cerricola*; *Biorhiza pallida*; *Cynips divisa*, *C. longiventris*; *Neuroterus lanuginosus*, *N. macropterus*, *N. saliens*. *Ceroptres clavicornis* was reared from *Andricus ambiguus*, *A. corruptrix*, *A. gallaetinctoriae*, *A. gallaeurnaeformis*, *A. glutinosus*, *A. lignicolus*, *A. quercuscalicis*; *C. cerri* from *Aphelonyx cerricola* and *Neuroterus macropterus*. *Saphonecrus undulatus* from *Andricus inflator* and *Aphelonyx cerricola*, and finally both *Periclistus* species from *Diplolepis rosae*.

MÉHES listed 96 species of oak gall wasps for the Hungarian fauna (AMBRUS 1969). In the recent check list of the Hungarian oak cynipid gall wasps fauna which includes the analysis of species names' validity and some new synonyms, 97 species are listed (MELIKA & CSÓKA 1999, in press). Thus, the MÉHES collection, with a few exceptions, includes all species of oak gall wasps known currently from Hungary. The same is true for *Diplolepis* species and the representatives of the Aylacini tribe.

MÉHES (1952) described one new species of oak cynipid gall wasp from Hungary, *Cynips keszthelyensis*. However, it proved to be a synonym of *Andricus stefanii* (KIEFFER, 1897) (MELIKA & CSÓKA 1999, in press).

\* \* \*

*Acknowledgments* – We express our deepest appreciation to Dr. L. ZOMBORI (Hungarian Natural History Museum, Budapest) for loaning us the adult wasps collection of Dr. GYULA MÉHES and for valuable comments on our paper.

## REFERENCES

- AMBRUS, B. (1969): Adatok a hazai gubacsfauna ismeretéhez VII. Méhes Gyula gubacsgyűjteménye. (Beiträge zur Kenntnis der ungarischen Gallenfauna. VII. Die Gallensammlung von Gy. Méhes.) – *Folia ent. hung.* **22** (1): 49–100.
- MELIKA, G. & CSÓKA, GY. (1999): Check list of oak gall wasps of Hungary (Hymenoptera: Cynipidae, Cynipinae, Cynipini). – *Acta zool. hung.* (In press).
- MÉHES, GY. (1922): Hazánk tölgyfagubacsai. (Die Eichengallen Ungarns.) – *Bot. Közlem.* **20** (4–6): 140–145.
- MÉHES, GY. (1937): Gubacs és gubacsdarázs. [Gall and Gall Wasp.] – *Bűvár*: 93–96.
- MÉHES, GY. (1939): Tölgyfagubacs gyűjtéseim az Adria partvidékén. (Eichengallen aus meinen Aufsammlungen im Küstengebiet der Adria.) – *Annl. Mus. natn. hung.* **32**: 2–7.
- MÉHES, GY. (1943): Tölgyfagubacsok és gubacsdarázsok a Balaton környékéről. (Über die eichengallen und wespen aus der umgebung Balaton Sees.) – *Annl. Mus. natn. hung.* **36**: 185–198.
- MÉHES, GY. (1953): Nouvelles galles du chene, se presentant tres rare. – *Annl. hist.-nat. Mus. natn. hung.* **3**: 183–189 + 2 plates.
- MÉHES, GY. (1955): Ethológiai tanulmányok tölgyfagubacsokon és gubacsdarázsokon. (Études éthologiques sur les galles du chene et sur les Cynips.) – *Állatt. Közlem.* **45** (1–2): 67–73.
- PUJADE-VILLAR, J. & ROS-FARRÉ, P. (1999): Review of the uncertain *Neuroterus* species described by HARTIG (Hym., Cynipidae). – *Ann. Naturhist. Mus. Wien* (In press).
- PUJADE-VILLAR, J., ROS-FARRÉ, P. & ARNEDE, M. A. (1998): Phylogenetic position of *Neuroterus antracinus* (Curtis, 1838) comb. nov. (Hymenoptera: Cynipidae). – *Buttl. Inst. Cat. Hist. Nat.* **66**: 111–112.