

NEW DATA ABOUT THE GALLS FROM TINCA AREA (BIHOR COUNTY, ROMANIA)

Aurelian Leonardo Ilie ^{1*}, Mariana Marinescu ²

¹ Nicolae Jiga Theoretical High School Tinca, Bihor county, Republicii Str., No 36/A, Romania

² University of Oradea, Didactic Staff Training Department, University Str., No.1, Romania

Abstract

The study presented the species which induce galls, identified in Tinca area during 2003-2017. These species (93) belongs to different taxonomic groups: insects, acari, fungus. The biggest percentage is held by insects - 76 species, followed by Acari - 11 species and Fungus - 6 species. The most represented family is Cynipidae - 36 species. The distribution of the orders of gall inducing insects is the next - Diptera-39 species, Hymenoptera - 30 species, Homoptera - 6 species, Coleoptera - 1 species. Within the fungi, the distribution is the following: Ascomycetae - 1 species, Erysiphaceae - 1 species, Peronosporaceae - 2 species, Hypocreaceae - 1 species, Pucciniaceae - 1 species.

Keywords: galls, Tinca area, gall-inducing species.

1. INTRODUCTION

Tinca area is located in the South Western part of Bihor County, belonging to the historical province of Crişana, with a surface of 454 km², at the confluence of the Miersigului Plain and the Holodului Depression. The middle altitude is 130 m, the climate is temperate - continental moderate and the drainage is represented by Crişul Negru River.

Galls are considered those abnormal outgrowths of plant tissues caused or induced by various vegetal or animal parasite sources.

Galls are developed in a certain organ of the plant and in a certain period of time, representing a defence reaction of the attacked plant.

One part from the attacked plants belongs to the agricultural cultures or woody essences, so in certain periods of vegetation can produce important economic damages.

2. MATERIALS AND METHODS

The collecting of galls was recorded during 2003-2017, in the period April - October, in different ecosystems from Tinca area: oak forest, beech forest, forest mixture of different deciduous forests, pastures with Gramineae (Poaceae) and other plants, the waterside of Crişul Negru River.

The galls were collected into plastic bags, together with one part from the attacked organ the plant. After the identification of the gall-inducing species, of the host plant and of the attacked organ and the collecting data were written down. The determinations were realized after the galls and / or gall-inducing, insect species, using different guides (Darlington, 1968; Neacşu, 2006). Notes about the galls from Tinca area are found in the works of Ilie and Marinescu (2011), Ilie (2012, 2013, 2014).

3. RESULTS AND DISCUSSIONS

Following the researches recorded in Tinca area in the analyzed period, a number of 93 gall-inducing species was identified. The distribution and systematic framing are presented in Table 1:

Table 1. The distribution and the systematic frame of gall-inductors from Tinva area (original)

Gall-inductors	Orders, Classes, Families
Acari	<i>Eriophyidae</i>
Insects	<i>Homoptera (Aphididae, Pemphigidae, Schizoneuridae)</i> <i>Hymenoptera (Cynipidae, Tenthredinidae)</i> <i>Coleoptera (Curculionidae)</i> <i>Diptera (Cecidomyiidae, Tephritidae)</i>
Fungus	<i>Ascomycetae, Erysiphaceae, Peronosporaceae, Hypocreaceae, Pucciniaceae</i>

The list of the galigene species from Tinca area:

- Aceria macrochela* Nalepa, 1851 (*Eriophyidae*) - on the lamina of *Acer* Linnaeus, 1758
Dasyneura tympani Kieffer, 1909 (*Cecidomyiidae*) - on the lamina of *Acer campestre* Linnaeus, 1763
Dasyneura acer crispans var. *rubella* (*Cecidomyiidae*) - the young lamina of *Acer* Linnaeus, 1758
Rhopalomyia ptarmicae Vallot, 1849 (*Cecidomyiidae*) - on the inflorescences of *Achillea* Linnaeus, 1763
Aceria (Eriophyes) brevitarsa Fockeu, 1890 (*Eryophyidae*) - on the lamina of *Alnus* Miller, 1823
Dasineura alni Low 1877 (*Cecidomyiidae*) - on the lamina of *Alnus* Miller, 1823
Stefaniella cecconii Kieffer, 1909 (*Cecidomyiidae*) - on the inflorescences of *Atriplex patula* Linnaeus, 1763.
Eriophyes canestrinii Nalepa, 1891 (*Eriophyidae*) - on the lamina of *Buxus sempervirens* Linnaeus, 1783
Monarthropalpus buxi Geoffroy, 1950 (*Cecidomyiidae*) - on the lamina of *Buxus sempervirens* Linnaeus, 1783
Dasyneura ruebsaameni Kieffer, 1909 (*Cecidomyiidae*) - on the lamina of *Carpinus betulus* Linnaeus, 1763
Euribia (Tephritis) cardui Linnaeus, 1758 (*Tephritidae*) - on the stem of *Cirsium* Miller, 1823
Craneiobia corni Giraud (*Cecidomyiidae*) - on the lamina of *Cornus* Linnaeus, 1763
Contarinia corylina Low, 1787 (*Cecidomyiidae*) - on the amentum of *Corylus* Linnaeus, 1746
Dasyneura crataegi Winn, 1853 (*Cecidomyiidae*) - on the leaf of copse of *Crataegus* Linnaeus, 1746
Hartigiola annulipes Hartig, 1839 (*Cecidomyiidae*) - on the lamina of *Fagus sylvatica* Linnaeus, 1758
Mikiola fagi Hartig, 1839 (*Cecidomyiidae*) - on the lamina of *Fagus sylvatica* Linnaeus, 1758.
Dasyneura glechomae Kieffer, 1909 (*Cecidomyiidae*) - on the leaf of copse of *Glechoma hederacea* Linnaeus, 1763
Rondaniola bursaria Bremi, 1847 (*Cecidomyiidae*) - on the lamina of *Glechoma hederacea* Linnaeus, 1763
Pseudoperonospora humuli Wilson, 1914 (*Peronosporaceae*) - on the lamina of *Humulus lupulus* Linnaeus, 1758

- Aceria (Eriophyes tristriata) erinea* Nalepa, 1891 (*Eriophyidae*) - on the lamina of *Juglans regia* Linnaeus, 1758
- Dasyneura mali* Kieffer, 1909 (*Cecidomyiidae*) - the lamina of *Malus Miller*, 1823
- Contarinia medicaginis* Kieffer, 1909 (*Cecidomyiidae*) - on the floral bud of *Medicago sativa*, Linnaeus, 1758
- Ascomyces aureus* Monter & Desmond, 1863 (*Ascomycetes*) - on the lamina of *Populus* Linnaeus, 1763
- Pemphigus bursarius* Linnaeus, 1758 (*Pemphigidae*) - on the petiole of *Populus* Linnaeus, 1763
- Pemphigus filaginis* Fonseca, 1857 (*Pemphigidae*) - on the petiole of *Populus* Linnaeus, 1763
- Pemphigus spirothecae* Passerini, 1860 (*Pemphigidae*) - on the petiole of *Populus* Linnaeus, 1763
- Albugo portulacae* Kuntze, 1853 (*Peronosporaceae*) - on the lamina and the stems of *Portulaca* Linnaeus, 1763
- Macrolabis rübsaameni* Hedicke, 1938 (*Cecidomyiidae*) - on the inflorescences of *Prunella* Linnaeus, 1758
- Roepkea marchali* Börner, 1931 (*Homoptera*) - on the leaves of copse of *Prunus cerasifera* Erherbert, 1897
- Polystigma rubrum* Person, 1815 (*Hypocreaceae*) - on the lamina of *Prunus domestica* Linnaeus, 1758
- Andricus caputmedusae* Hartig, 1843 (*Cynipidae*) - on the copse of *Quercus* Linnaeus, 1763.
- Andricus foecundatrix* Hartig, 1843 (*Cynipidae*) - at the base of petiole of *Quercus* Linnaeus, 1763
- Andricus gallaetinctoriae* Olivier, 1791 (*Cynipidae*) - at the base of petiole of *Quercus* Linnaeus, 1763
- Andricus hungaricus* Hartig, 1843 (*Cynipidae*) - on the buds of *Quercus* Linnaeus, 1763
- Andricus kollari* Hartig, 1843 (*Cynipidae*) - on the buds of *Quercus* Linnaeus, 1763
- Biorhiza pallida* Olivier, 1791 (*Cynipidae*) - at the extremity of the branch of *Quercus* Linnaeus, 1763
- Cynips divisa* Hartig, 1843 (*Cynipidae*) - the nervures of the ventral part of the lamina of *Quercus* Linnaeus, 1763
- Cynips quercus* Fourcroy, 1785 (*Cynipidae*) - the nervures of the ventral part of the lamina of *Quercus* Linnaeus, 1763.
- Cynips quercusfolii* Linnaeus, 1758 (*Cynipidae*) - the nervures of the ventral part of the lamina of *Quercus* Linnaeus, 1763.
- Neuroterus numismalis* Olivier, 1791 (*Cynipidae*) - on the ventral part of lamina of *Quercus* Linnaeus, 1763
- Neuroterus quercusbaccarum* Linnaeus, 1758 (*Cynipidae*) - on the ventral part of lamina of *Quercus* Linnaeus, 1763
- Synophrus politus* Hartig, 1843 (*Cynipidae*) - on the branches of *Quercus cerris* Linnaeus, 1758
- Macrodiplosis dryobia* Low, 1878 (*Cecidomyiidae*) - on the lamina of *Quercus* Linnaeus, 1763
- Sphaerotheca pannosa* var. *rosae* Worel, 1876 (*Erysiphaceae*) - on the lamina of *Rosa* Linnaeus, 1763
- Blenoncampa pusilla* Klug, 1816 (*Tenthredinidae*) - on the lamina of *Rosa* Linnaeus, 1763
- Diplolepis eglantariae* Hartig, 1763 (*Cynipidae*) - on the lamina of *Rosa* Linnaeus, 1763
- Diplolepis rosae* Linnaeus, 1758 (*Cynipidae*) - on the branches, lamina and fruits of *Rosa* Linnaeus, 1763
- Wachtliella rosarum* Hardy, 1850 (*Cecidomyiidae*) - on the lamina of *Rosa* Linnaeus, 1763
- Dasyneura plicatrix* Low, 1878 (*Cecidomyiidae*) - on the lamina of *Rubus* Linnaeus, 1763

- Lasyoptera rubi* Schrank, 1803 (*Cecidomyiidae*) - on the stems of *Rubus* Linnaeus, 1763
Pontania proxima Serville, 1823 (*Tenthredinidae*) - on the lamina of *Salix* Linnaeus, 1763
Pontania vesicator Bremi, 1849 (*Tenthredinidae*) - the lamina of *Salix* Linnaeus, 1763
Dorytomus taeniatus Fabricius, 1781 (*Curculionidae*) - the inflorescence of *Salix* Linnaeus, 1763
Iteomyia capreae Winnertz, 1853 (*Cecidomyiidae*) - the lamina of *Salix* Linnaeus, 1763
Rhabdophaga (Helicomyia) saliciperda Dufour, 1841 (*Cecidomyiidae*) - on the branches of *Salix* Linnaeus, 1763
Rhabdophaga terminalis Low, 1878 (*Cecidomyiidae*) - on the lamina of *Salix* Linnaeus, 1763
Cystiphora sonchi Low, 1878 (*Cecidomyiidae*) - on the lamina of *Sonchus* Linnaeus, 1763
Eriophyes exilis Nalepa, 1891 (*Eriophyidae*) - on the lamina of *Tilia* Linnaeus, 1763
Eriophyes lateannulatus Schulze, 1918 (*Eriophyidae*) - on the lamina of *Tilia* Linnaeus, 1763
Eriophyes leiosoma Nalepa, 1891 (*Eriophyidae*) - on the lamina of *Tilia* Linnaeus, 1763
Didydomyia reaumuriana Low, 1878 (*Eriophyidae*) - on the lamina of *Tilia* Linnaeus, 1763
Dasyneura trifolii Low, 1878 (*Eriophyidae*) - on the lamina of *Trifolium* Linnaeus, 1758
Byrsocrypta (Tetraneura) ulmi Linnaeus, 1758 (*Aphididae*) - on the lamina of *Ulmus* Linnaeus 1763
Janetiella lemei Kieffer, 1909 (*Cecidomyiidae*) - on the principal nervure of the lamina of *Ulmus* Linnaeus, 1763
Dasyneura urticae Perris, 1840 (*Cecidomyiidae*) - on the leaf, stems and flowers of *Urtica dioica* Linnaeus, 1758
Japiella veronicae Vallot, 1827 (*Cecidomyiidae*) - on the lamina of *Veronica chamaedrys*, Linnaeus, 1758
Dasyneura viciae Kieffer, 1909 (*Cecidomyiidae*) - on the leaf of the branches top of *Vicia* Linnaeus, 1758
Dasyneura affinis Kieffer, 1909 (*Cecidomyiidae*) - the lamina of young leaf of *Viola odorata* Linnaeus, 1758
Eriophyes vitis Pagen Stecher, 1857 (*Eriophyidae*) - on the lamina of *Vitis* Linnaeus, 1758.
Cryptomyzus ribis Linnaeus, 1758 (*Aphididae*) - on the lamina of *Ribes rubrum* Linnaeus, 1758
Rhabdophaga heterobia Low, 1878 (*Cecidomyiidae*) - on the lamina or the female amentum of *Salix* Linnaeus, 1763
Andricus coriarius Hartig, 1843 (*Cynipidae*) - on the lamina of *Quercus* Linnaeus, 1763
Andricus coronatus Giraud, 1859 (*Cynipidae*) - on the lamina of *Quercus* Linnaeus, 1763.
Andricus glutinosus Giraud, 1859 (*Cynipidae*) - on the lamina of *Quercus* Linnaeus, 1763
Andricus lucidus Hartig, 1843 (*Cynipidae*) - on the lamina of *Quercus* Linnaeus, 1763
Andricus lignicola Hartig, 1843 (*Cynipidae*) - on the lamina of *Quercus* Linnaeus, 1763
Aphelonyx cerricola Giraud, 1859 (*Cynipidae*) - on the branches of *Quercus* Linnaeus, 1763
Chilospiis nitida Giraud, 1859 (*Cynipidae*) - on the branches of *Quercus* Linnaeus, 1763
Dryomyia circinnans Giraud, 1858 (*Cynipidae*) - on the lamina of *Quercus* Linnaeus, 1763
Neuroterus anthracinus Curtis, 1838 (*Cynipidae*) - on the lamina of *Quercus* Linnaeus, 1763
Neuroteus lanuginosus Giraud, 1859 (*Cynipiade*) - on the lamina of *Quercus* Linnaeus, 1763
Neuroterus petioliventrtris Hartig, 1843 (*Cynipiade*) - on the lamina of *Quercus* Linnaeus, 1763
Trigonaspis megaptera Panser, 1801 (*Cynipidae*) - on the lamina of *Quercus* Linnaeus, 1763
Gymnosporangium sabiniae Dicks, 1830 (*Basidiomycetae*) - on the lamina of *Pyrus* Linnaeus, 1758
Eriophyes padi prunianus Nalepa, 1891 (*Eriophyidae*) - on the lamina of *Prunus spinosa* Linnaeus, 1758

Schizoneura (Eriosona) lanuginosa Harting, 1843 (*Schizoneuridae*) – at the branch of *Ulmus* Linnaeus, 1763

Lipostenes glechomae Linnaeus, 1758 – on the lamina of *Glechoma hederacea* Linnaeus, 1758

Diastrophus rubi Bouche, 1860 – on the stem of *Rubus idaeus* Linnaeus, 1758

Rhabdophaga rosaria Low, 1850 (*Cecidomyiidae*) – on the terminal leaves of *Salix* Linnaeus, 1763

Obolodiplosis robiniae Haldeman, 1847 (*Cecidomyiidae*) – on the leaves of *Robinia pseudoacacia* Linnaeus, 1758.

Aceria tetranothrix Nalepa, 1891 (*Eriophyidae*) – on the lamina of *Salix* Linnaeus, 1763

Euribia cardui Linnaeus, 1758 (*Tephritidae*) – on the stem of *Cirsium arvense* Linnaeus, 1758

Gymnosporangium sabinae Oerst, 1863 (*Pucciniaceae*) – on the lamina of *Pyrus communis* Linnaeus, 1758

Aceria tristata Nalepa, 1891 (*Eriophyidae*) – on the lamina of *Juglans regia* Linnaeus, 1758

From the total of the 93 gall-inducing species, the family *Cecidomyiidae* is prevalent from the specific character point of view (36 species – 38.70%), followed by *Cynipidae* (27 species – 29.03%), *Eriophyidae* (11 species – 11.82%), *Pemphigidae* (3 species – 3.22%), *Tenthredinidae* (3 species – 3.22%), *Peronosporaceae* (2 species – 2.15%), *Aphididae* (2 species – 2.15%), *Tephritidae* (2 species – 2.15%), *Ascomycetes* (1 species – 1.07%), *Hypocreaceae* (1 species – 1.07%), *Erysiphaceae* (1 species – 1.07%), *Schizoneuridae* (1 species – 1.07%), *Pucciniaceae* (1 species – 1.07%) and *Curculionidae* (1 species – 1.07%).

The percentage ratio of the groups of gall-inducing organisms is the next: Insects – 76 species (81.72%), Acari – 11 species (11.82%) and Fungus – 6 species (6.45%).

The percentage distribution of the orders of gall-inducing insects is the next: *Diptera* – 39 species (51.31%), *Hymenoptera* – 30 species (39.47%), *Homoptera* – 6 species (7.89%) and *Coleoptera* – 1 species (1.31%).

Within the Fungi the percentage ratio is: *Ascomycetae* – 1 species (16.6%), *Erysiphaceae* – 1 species (16.66%), *Peronosporaceae* – 2 species (33.33%), *Hypocreaceae* – 1 species (16.66%), *Pucciniaceae* – 1 species (16.66%).

4. CONCLUSIONS

In the analyzed period, in Tinca area, 93 gall-inducing species were identified, the biggest percentage being held by insects.

The gall-inducing species belongs to three groups of organisms: insects, acari, fungus.

5. REFERENCES

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