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# CONTRIBUTION TO THE DAMSELFLY FAUNA (ODONATA: ZYGOPTERA) OF DOLJ COUNTY (SW ROMANIA)

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## ABSTRACT

*This paper presents the result of the damselfly faunal investigation during May 2022 – July 2023 in Dolj county (Oltenia Plain, SW part of Romania). The faunal list includes 12 collected species belonging to four families – Lestidae, Calopterygidae, Platycnemididae and Coenagrionidae. For the species Coenagrion scitulum (Rambur, 1842) the male abdominal appendages are discussed in comparison with bibliography.*

## INTRODUCTION

Odonata are standing-apart insects in their form, function, and biology. Most species are included in two major taxa – Zygoptera or the damselflies and Anisoptera or the dragonflies. The major differences between the two taxa reside in the body size and the appearance of the two pairs of wings (the forewings and the hindwings): a smaller body size and similar pairs wings in Zygoptera, and a more robust body and different aspect of the forewing and hindwing in Anisoptera.

The damselfly fauna of Dolj county, as well as from elsewhere should be of permanent interest. On the damselfly fauna of this region the available bibliography (Cîrdei & Bulimar 1965, Manci 2012) covers a certain area especially along the Jiu and Danube Rivers. The aim of this paper is to inspect the composition of the Zygopteran fauna on a wider area of Dolj county at the present time.

Dolj county is situated in SW Romania and is an important part of the Oltenia Plain. The hydrography of this region is varied. It includes a rich network of running waters, most of them with permanent flow, also stagnant waters, both natural and managed for fishing and recreational purposes.

## MATERIAL AND METHODS

The investigated area – Fig. 1, includes the wetlands of the following localities: the peripheral areas of Craiova (Balta Craioviței, Lacul Tanchistului, Hanul Doctorului), Bratovoiești, Toceni-Dobrești Lake, Ostroveni on Jieț River, Lișteava Pool (near locality Ostroveni), Dăbuleni (32 springs), Bistreț Lake, Rast (former agricultural irrigation canals), Maglavit Lake, Băilești – Balasan Lake, Balta Cilieni (near Băilești), Siliștea Crucii on Baboia River, Baboiaș, Radovan on Deznățui River, Fântânele Lake (near Radovan), Verbița – Verbicioara on Deznățui River, Vela-Sălcuța, Terpezița on Terpezița River, Filiași Lake, Bulzești Lake.

The binocular photos were taken by the author with a Samsung tablet.


Figure 1. The map of Dolj county with the collection sites (map processed from Dolj.jpg (1215×1026) (pe-harta.ro))

A very small number of males and females were collected with the entomological net from each location, during May 2022 and July 2023. The specimens were introduced in 70° ethanol in which they are also preserved. The specimens are deposited in a dark place, in author private collection at University of Craiova. When sampling was not possible, the record was done based on observations (visual inspection).

The bibliographic resources used for species identification (imago) are Askew (2004), Boudot et al. (2019), Cîrdei & Bulimar (1965), Dijkstra et al. (2020), Smallshire & Swash, (2020), Wildermuth & Martens (2019).

## RESULTS AND DISCUSSIONS

Results
The faunistic account
Fam. Lestidae

1) *Lestes barbarus* (Fabricius, 1798)
Terpezița, 16 June 2022

2) *Sympecma fusca* (Vander Linden, 1820)
Craiova – Lac Tanchist, 1 June 2022

Fam. Calopterygidae
3) *Calopteryx splendens* (Harris, 1780)
Ostroveni, 24 May 2022 – visual inspection
Radovan-bridge, 16 June 2022
Terpezița, 16 June 2022
Filiași, 22 June 2022
Bulzești, 24 June 2022
Bratovoiești, 28 July 2022
Siliștea Crucii, 20 May 2023

Fam. Platycnemididae
4) *Platycnemis pennipes* (Pallas, 1771)
Toceni-Dobrești, 24 May 2022
Craiova (peripheral areas): Lac Tanchist, 1 June 2022, Hanul Doctorului, Balta Craiovița
Filiași, 22 June 2022
Bulzești, 24 June 2022
Baboiaș, 12 July 2022
Radovan Forest (wet area), 16 June 2022
Radovan (bridge on Deznățui), 16 June 2022
Verbicioara, 12 July 2022
Terpezița, 12 July 2022, 16 June 2022
Vela-Sălcuța, 16 June 2022
Bratovoiești (bridge), 28 July 2022
Siliștea Crucii, 20 May 2023
Fântânele Lake, 4 July 2023

Fam. Coenagrionidae
5) *Coenagrion ornatum* (Selys, 1850) – Fig. 2
Dăbuleni-32 izvoare, 24 May 2022
Rast, 9 June 2022
Siliștea Crucii, 20 May 2023

6) *Coenagrion pulchellum* (Vander Linden, 1825)
Ostroveni, 24 May 2022
Lișteava, 24 May 2022
Balta Cilieni, 9 June 2022
Lac Balasan, 9 June 2022
Craiova-Lac Tanchist, 1 June 2022

7) *Coenagrion puella* (Linnaeus, 1758)
Terpezița, 16 June 2022, 12 July 2022
Radovan (small agricultural reservoir), Radovan-Deznățui, 16 June 2022
Filiași, 22 June 2022
Verbicioara, 12 July 2022

Craiova peripheral areas: Lac Tanchist, Balta Craiovița, 1 June 2022; Hanul Doctorului, 05 June 2022

8) *Coenagrion scitulum* (Rambur, 1842) – Fig. 3
Terpezița, 12 July 2022 **(1♂)**

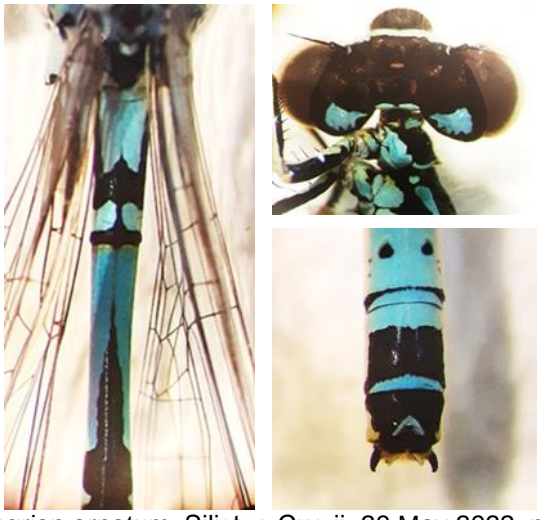

Figure 2. *Coenagrion ornatum*, Siliștea Crucii, 20 May 2023, male: the dorsal pattern on abdominal S2, the postocular spots, the cerci in dorsal view

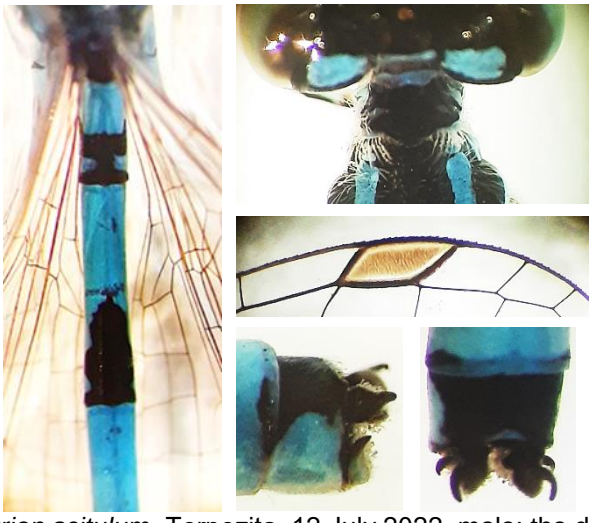

Figure 3. *Coenagrion scitulum*, Terpezița, 12 July 2022, male: the dorsal pattern on abdominal S2, the triangular posterior edge of the prothorax, the elongated quadrangular pterostigma, the cerci in lateral and dorsal view

9) *Erythromma viridulum* (Charpentier, 1840)
Maglavit Lake, 16 June 2022, 12 July 2022
Filiași, 22 June 2022

Balta Cilieni, 9 June 2022, Balasan lake (Băilești)
*Erythromma sp.* – visual inspection
Rast, 9 June 2022
Lișteava, 28 July 2022

10) *Ischnura elegans* (Vander Linden, 1820)
Craiova peripheral areas: Lac Tanchist, 01 June 2022; Hanul Doctorului, 05 June 2022; Balta Craioviței, 33 July 2022
Toceni-Dobrești, 24 May 2022
Balasan Lake-Băilești, 9 June 2022
Maglavit lake, 16 June 2022, 12 July 2022
Radovan (small agricultural basin), 16 June 2022
Filiași Central Lake, 22 June 2022
Bulzești, 24 June 2022
Baboiaș, 12 July 2022
Dăbuleni (32 springs), 28 July 2022
Fântânele, 4 July 2023
Cilieni Pool, 4 July 2023
Bistreț, 26 July 2023, population with an interesting variability of male abdominal appendages (subject of a future paper)

11) *Ischnura pumilio* (Charpentier, 1825) – Fig. 4
Fântânele, 4 July 2023

Figure 4. *Ischnura pumilio*, Fântânele, 4 July 2023 – the male cerci

12) *Pyrrhosoma nymphula* (Sulzer, 1776)
Craiova, Romanescu Park (Babalean 2023, in press)

Discussions

The species *Platycnemis pennipes* and *Ischnura elegans* are the most common, being found in almost all collection points. At the opposite pole are the species *Lestes barbarus*, *Sympecma fusca*, *Coenagrion scitulum*, *Ischnura pumilio* and *Pyrrhosoma nymphula* which were found in only one collection point, each. Of these latter species, *Coenagrion scitulum* and *Pyrrhosoma nymphula* were collected in only one male specimen for each species.

The abdominal appendages of the male identified as *C. scitulum* have characters similar with *C. caerulescens*, (a species that is not present on the territory of Romania); they also have their own, distinct characters:
- the inferior appendages are *C. caerulescens* like, thin and longer than that of *C. scitulum* presented in the literature (Askew 2004 – pg. 78, figs. 86, 87). They are

internally curved and very well visible from dorsal view – Fig. 3
- the superior appendages are distinct and different from *C. scitulum* and *C. caerulescens*, showing a broad base from which starts a long, inwardly curved spine – Fig. 3.

Whether this male should be assigned to a new taxon (species/subspecies) is to be investigated. Until then, its identity remains *C. scitulum* based on the triangular aspect of the posterior edge of prothorax, also on the elongated and quadrangular wing pterostigma as presented by Askew (2004).

## CONCLUSIONS

The faunistic account of this paper might be important for the current issues of damselfly Odonata: diversity monitoring for biological conservation (the next Red List of species), the evolution of the distribution range under the impact of climate change and anthropic factor, ecological research, etc.


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