

*METRIOPTERA (ZEUNERIANA) AMPLIPENNIS* (BRUNNER VON WATTENWYL, 1882) – NEW ORTHOPTERA SPECIES FOR THE DANUBE DELTA BIOSPHERE RESERVE

GABRIEL LUPU

For the first time observed in Romania in August 2006, near the Cernavodă city, and indicated like new genus and species for Romanian territory, *Metrioptera (Zeuneriana) amplipennis* was found again in 2009 in the Danube Delta Biosphere Reserve, near the Maliuc village, this area being the newest eastern known limit of distribution for this species belonging to Orthoptera order.

*Key words:* *Metrioptera (Zeuneriana) amplipennis*, Orthoptera, Danube Delta Biosphere Reserve.

**INTRODUCTION**

The *Metrioptera* genus, *Zeuneriana* subgenus (*Tettigoniidae* family, *Platycleidini* tribe) includes 4 species outspread in south Europe: *Zeuneriana abbreviata* (Pirinei Mountains), *Zeuneriana amplipennis* (Serbia and Romania), *Zeuneriana burriana* (Spain) and *Zeuneriana marmorata* (Italy and Slovenia) (Iorgu, 2009).

*Metrioptera (Zeuneriana) amplipennis* Brunner von Wattenwyl, 1882 was considered endemic to northern Serbia, and has been recorded within the narrow zone of mesophyllic and hygrophyllic communities surrounding the former Yugoslavian part of the Danube and Sava rivers. It is highly unusual that this species has never been recorded outside this region, although the appropriate habitats are relatively widespread (<http://www.biopolitics.gr/HTML/PUBS/VOL6/HTML/radovic.htm>).

The species prefer area with abundant vegetation-plants with no more than 30-50 cm tallness, near the river shore. It is a very shy bush-cricket, which quickly jumps toward the ground and hides in the thick bushes. For the first time it was observed in Romania in August 2006, near the Cernavodă city, and is indicated like a new genus and species for the Romanian territory (Iorgu, 2009).

On the other hand, the Danube Delta Biosphere Reserve is characterized by having a rich and diverse fauna of Orthoptera with about 80 known species (Iorgu *et al.*, 2008), one species (*Isophya dobrogensis*) being endemic on the northern part of Lake Razim (Kis, 1994).

**MATERIAL AND METHODS**

The Danube Delta is a region that was intensely studied in the past century by some researchers, Bela Kis being the one who made the most complex

investigations. He described two new Orthoptera taxa in this area: *Saga campbelli gracilis* (new subspecies at Histria) (Kis, 1962) and *Isophya dobrogensis* (new species on Popina Island) (Kis, 1994).

It is an area of great biogeographical interest, because it is the meeting point between the European, Mediterranean and central Asiatic-European elements of orthopterofauna. The Danube Delta is characterized by the permanent presence of a large water mass, the influence of the Black Sea neighborhood being at the same time important, for climate and for the influence of the presence and the distribution of the species and their characteristic habitats.

The investigations were made inside of some research projects concerning the realization of the atlas of Orthoptera species from the Danube Delta and the reconsideration of the limits for the functional area from the Danube Delta Biosphere Reserve, the entomofaunistic investigations giving some interesting elements.

In August 2009, some investigations that were made near the Maliuc village (26 mile from the Sulina Channel) (Fig. 1), revealed the presence of one new Orthoptera species for this geographical area – *Metrioptera (Zeuneriana) amplipennis* (Brunner von Wattenwyl, 1882), the species being known as spread along the Sava river basin in Vojvodina and in the surroundings of Belgrad area (Gomboc & Šegula, 2005).

The investigations were made by itinerary method, from east to west on the right shore of Sulina channel, on the internal part of the Danube Delta Biosphere Reserve territory.

The species was identified by stridulating sound, this being different from the sound of the species normally present and found in this area, the investigation revealing the presence of two grasshopper males belonging to the *Metrioptera amplipennis* species.

The images were collected with Canon S5IS photo camera.

## RESULTS AND DISCUSSION

*Metrioptera (Zeuneriana) amplipennis* is synonym with *Platypleis amplipennis* Brunner von Wattenwyl (Prodr. Eur. Orth., 1882); *Metrioptera amplipennis* Ramme (Mitt. Zool. Mus. Berlin, 24, 1939); *Sphagniana amplipennis* Zeuner (Roy. Ent. Soc. Lond. Trans., 91, 1941).

Our investigation reveal the presence of *Metrioptera (Zeuneriana) amplipennis* species in hygrophilous habitat dependent on seasonal fluctuation of Danube waters, in the hottest month of the year, in one area where, from plants, predominant was *Xanthium strumarium*. The temperature was circa 30°C and the cover with clouds was minimal. The human intervention is minimal, the area being not interesting from economical point of view.

The area where species was found has “Rivers with muddy banks with *Chenopodium rubri* p.p. and *Bidention* vegetation” type of habitat, this being characterized by *Xanthium strumarium* as dominant species (Sanda *et al.*, 2008).

The cover with vegetation is about 70-75%. The most important vegetal species from this type of habitat are: *Xanthium strumarium*, *Urtica dioica*, *Chenopodium album*, *C. urticum*, *Atriplex hastata*, *Amaranthus retroflexus*, *Althaea officinalis*, *Plantago major*, *Bidens tripartita*, *Polygonum hydropiper*, *P. lapathifolium*, *Rorippa austriaca*, *Symphytum officinale*, *Chlorocyperus glomeratus*, *Rumex palustris*. These have 40-50 cm height being the tall herbaceous layer, the lower layer being characterized by the presence of: *Alopecurus aequalis*, *Mentha arvensis*, *Chenopodium botrys* or *Ranunculus sceleratus* (Sanda *et al.*, 2008).

The presence and distribution of this type of habitat was observed, regular on the shore area of channels and Danube branches with organic material. The relief is regular plane or very low inclined. The conservative value of this type of habitat is low.



Fig. 1. The Danube Delta Biosphere Reserve – Maliuc area (modified and added satellite image) (<http://maps.google.com/>).

The species was observed in dense vegetation formed especially by herbaceous species *Xanthium strumarium*, *Arctium minus*, *Cirsium vulgare*, *Urtica*

*dioica* and from ligneous species *Amorpha fruticosa*, near the water limit of the right shore of Sulina Branch, upstream the Maliuc village.

The observed individuals sitting on not more than 50 centimeters tall plants are hiding, at the smallest signal of danger, on the basis of the plant where they were found.



Fig. 2. *Metrioptera (Zeuneriana) amplipennis* (orig.).

The type of habitat where *Metrioptera (Zeuneriana) amplipennis* (Fig. 2) was observed is in a great measure similar to that where Iorgu (2009) has found it for the first time in the Romanian fauna.

#### CONCLUSIONS

Considered endemic from Belgrad area (Serbian part of the Danube and Sava rivers), *Metrioptera (Zeuneriana) amplipennis* extends its distribution area from east, along the Danube river valley, being found in the summer of 2009 (in July) in the Danube Delta Biosphere Reserve, near the Maliuc village, on the right shore of Sulina branch.

The point of observation from the Danube Delta Biosphere Reserve represents the newest known eastern limit of distribution for the species.

The biodiversity from the Danube Delta Biosphere Reserve is growing touching the 80 taxa belonging to Orthoptera order.

#### REFERENCES

- BRUNNER VON WATTENWYL C., 1882, *Prodromus der Europäischen Orthopteren*. 466 pp. Leipzig.
- GOMBOC S., ŠEGULA B., 2005, *The finding of Zeuneriana marmorata (Fieber, 1853) in Slovenia (Orthoptera: Tettigoniidae)*. Acta Entomologica Slovenica, **13** (2): 81–92.
- IORGU I., 2009, *Diversitatea ortopterelor (Insecta: Orthoptera) din estul României și semnificația lor ecologică*. Ph.D. Thesis, Faculty of Biology, Iași, 437 pp.
- IORGU I., PISICĂ E., PĂIȘ L., LUPU G., IUȘAN C., 2008, *Checklist of Romanian Orthoptera (Insecta: Orthoptera) and their distribution by ecoregions*. Travaux du Museum d'Histoire Naturelle "Grigore Antipa", Bucharest, **LI**: 119-135.
- KIS B., 1962, *Saga italica gracilis, eine neue Unterart aus Rumanien*. Ann. Hist. Nat. Mus. Nat. Hung., **54**: 255-258.
- KIS B., 1994, *Isophya dobrogensis, Eine neue orthopteren Art aus Rumanien*. Travaux du Museum d'Histoire Naturelle "Grigore Antipa", Bucharest, **34**: 31-41.
- RAMME W., 1939, *Beiträge zur Kenntnis der palaearktischen Orthopterenfauna (Tettig. u Acrid.) III*. Mitteilungen Aus Dem Zoologischen Museum zu Berlin, **24**: 43-150.
- SANDA V., ÖLLERER K., BURESCU P., 2008, *Fitocenozele din România. Sintaxonomie-Structură, Dinamică și Evoluție*. Edit. Ars Docendi, Universitatea București, 570 pp.
- ZEUNER F.E., 1941, *The classification of the Decticinae hitherto included in Platycleis Fieb. or Metrioptera Wesm. (Orthoptera, Saltatoria)*. Transactions of the Royal Entomological Society of London, **91**: 1-50.
- \* \* \*, <http://www.biopolitics.gr/HTML/PUBS/VOL6/HTML/radovic.htm>
- \* \* \*, <http://maps.google.com>

Received January 13, 2011

"Danube Delta" National Institute  
165, Babadag Street, 820112,  
Tulcea, Romania  
e-mail: glupu@indd.tim.ro