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SOME NEW DATA ON INVESTIGATIONS OF PROTURAS AND DIPLURAS DISTRIBUTION IN SERBIA

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ABSTRACT. The collecting of *Protura* and *Diplura* (*Insecta*) were done on mountain Rudnik (about 100km South from Belgrade) and Niš region (also South-East from Belgrade, about 250km). The terrestrial material were taken in different ecosystems litter and consisted: ***Protura*** with 544 individuals, which belonging to 3 species (*Eosentomidae* 1 and *Acerentomidae* 2) and ***Diplura*** with 423 individuals, which belonging to 13 species (*Campodeidae* 10 and *Japygidae* 3). The numbers of individuals and species differs in ecosystem litters of mixed deciduous trees (oak, beech, elm and acacia) and meadows soil. The individuals were varied from 1.01-54.37%. The most number individuals of protura were collected in litters of woods (75.09%), while in the meadows soil they are more less (24,91%); while the most number individuals of diplura were collected in the meadows soil (80.57%). The most numerous *Protura* species was *Eosentomon transitorium* Berlese, 1908 (48.52%) while the others were more less (*Acerentomon balcanicum*, Ionescu, 1933, *Acerentulus traegardhi* Ionescu, 1937). The most numerous *Diplura* species was *Campodea* (*Dicampa*) *frenata* Silvestri, 1931; while more less were: *Campodea (Campodea*) *colladoi Silvestri,* 1939; *C.*(*C.*) *wallacei* Bagnall, 1918; *Campodea* (*Dicampa*) *campestre* Ionescu, 1955; *C.* (*D.*) *frenata*, Silvestri, 1931; *C. (D.) malpighii* Silvestri, 1912; *C.* (*D.*) *silvicola* Wygodzinsky, 1940; *C.* (*Paurocampa*) *rocasolanoi* Silvestri, 1932; *C. (P.) speleae* Ionescu, 1955; *C. (P.) suensoni* Tuxen, 1930; *Podocampa serbica* Karaman & Blesić, 1983; *Catajapyx confusus* Silvestri, 1929; *Japyx solifugus* Silvestri, 1933 and *Metajapyx gojkovići Pages,* 1953.

INTRODUCTION

This article is given a new data about distribution proturas and dipluras species. Investigations ware made in different ecosystems mostly in litters of forest trees (deciduous tree and meadow soil) and in distribution how differs in them number of species. They never can found in mass.

MATERIAL AND METHODS

The collecting of *Protura* and *Diplura* (*Insecta*) were done on mountain Rudnik (about 100km South from Belgrade) on 8 localities (Ugljarevac, Klisura, Ramaća, Taborište, Dobrača, Poskurice, Šljivovac, Grbice) and region of Niš on 11 (Crnče, Dušnik, Gadžin Han, Lazarevo Selo, Leskovik, Kamenički Vis, Niška Banja, Ostrovica, Resnik and Šovarište). Nine hundred and seventy-seven (977) individuals were separated from samples on usual way. They belong in two order, four families and eleven species. On usually way they were collected and determined.

RESULTS AND DISCUSSION

The terrestrial materials were taken in different litter ecosystems and consisted ***Protura*** with 544 individuals, which belonging to 3 species (*Eosentomidae* (1) and *Acerentomidae* (2)) and ***Diplura*** with 423 individuals, which belonging to 13 species (*Campodeidae* (10) and *Japygidae* (3). The numbers of individuals and species differs in litters of different ecosystems (of mixed deciduous trees, oak, beech, elm, acacia) and meadows soil. The individuals were varied from 1.01-54.37%. The most number of protura individuals were collected in litters of woods (75.09%), while they are more-less in the meadows soil (24.91%).

Investigated ordo ***Protura*** was represented with two families.

Family *Acerentomidae* represented with two species and there are:

1. *Acerentomon balcanicum* Ionescu, 1933 was found on four localities (Ramaća, Klisura, Grbice, Poskurice) in litter of mixture of deciduous trees, oak and acacia with 95 individuals.
2. *Acerentulus traegardhii* Ionescu, 1937 was found on 5 localities (Ugljarevac, Ramaća, Šljivovac, Poskurice, Grbice) in litter of mixture of deciduous trees and meadow soil with 184 individuals.

Family *Eosentomidae* represented with one species and that is:

3. *Eosentomon transitorium* Berlese, 1908 was found on seven localities (Dobrača, Ramaća, Klisura, Taborište, Ugljarevac, Šljivovac, Poskurice and Grbice) in litter of mixture of deciduous trees and meadow soil with 263 individuals.

The other investigated ordo ***Diplura*** was represented also with two following families:

Family Campodeidae are represented with seven species and there are:

1. *Campodea (Campodea) colladoi Silvestri,* 1939 was found on two localities (Ugljarevac and Taborište; Kamenički Vis, Ostrovica, Gadžin Han, Niška Banja and Leskovik) in litter of trees as: oak, beech and acacia, than in meadow soil, with 30 individuals.
2. *Campodea (Campodea) wallacei* Bagnall, 1918 was found on 6 localities (Taborište, Klisura, Dobrača, Grbice, Poskurice and Kamenicki Vis) in litter of beech trees and meadows soil with 67 individuals.

3. *Campodea (Dicampa) campestre* Ionescu, 1955 was found on 7 localities (Ugljarevac, Ramaća, Taborište, Klisura, Grbice, Poskurice, Šljivovac; Leskovik, Dušnik, Resnik, Niška Banja, Šovarište, Lazarevo Selo and Crnče) in litter of: mixture of deciduous trees, than oak and orchard trees, meadows soil, with 92 individuals.
4. *Campodea (Dicampa) frenata* Silvestri, 1931 was found on 9 localities (Ugljarevac, Klisura, Dobrača, Poskurice, Šljivovac, Grbice; Lazarevo Selo, Kamenički Vis and Leskovik) in litter of trees as: oak, beech and orchard; and medows soil, with 104 individuals.
5. *Campodea (Dicampa) malpighii* Silvestri, 1912 was found on 4 localities (Dušnik, Gadžin Han, Ostrovica and Niška Banja) in litter of: mixture of deciduous trees, than oak and acacia, with 20 individuals.
6. *Campodea (Dicampa) silvicola* Wygodzinsky, 1940 was fined on Dobrača locality, in meadow soil, with 1 individual.
7. *Campodea (Paurocampa) rocasolanoi* Silvestri, 1932 was found on two localities Klisura and Ostrovica in litter of acacia trees with 2 individuals. The first finding and her description is from South of Greek (Condé, 1984), later also is known from Macedonia and Montenegro (Blesić, 1998b, 2001). So this finding is the most North distribution this species. It can say that this species now is spread only on Balkan.
8. *Campodea (Paurocampa) speleae* Ionescu, 1955 was found on 1 locality (Kamenički Vis) in litter of beech trees with 10 individuals.
9. *Campodea (Paurocampa) suensoni* Tuxen, 1930 was found on 4 localities (Resnik, Kamenički Vis, Ostrovica, Gadžin Han) in litter of mixture of deciduous trees, oak, beech and acacia with 49 individuals.
10. *Podocampa serbica* Karaman & Blesić, 1983 was found three localities (Dobrača, Grbice, Poskurice) in meadows soil, with 7 individuals.

Family Japygidae are represented with three species and there are:

11. *Catajapyx confusus* Silvestri, 1929 was found on 5 localities (Šovarište, Crnče, Lazarevo Selo, Leskovik and Niška Banja) in litters of mixture of deciduous tree, oak and orchard trees with 30 individuals.
12. *Japyx solifugus* Silvestri, 1933 was found on three localities (Ramaća, Grbice, Šljivovac) in meadows soil and in litter of oak trees, with 9 individuals.
13. *Metajapyx gojkovići Pages,* 1953 was found on two localities: Taborište and Kamenički Vis, in meadow soil and in litter of beech trees, with 2 individuals.

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