

STABILITY OF BEETLE OCCURRENCE INSIDE FLOODPLAIN FOREST

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Abstract

Author was engaged in watching the occurrence of beetle imagoes in floodplain forest. Using the sweeping method during the four years research he gained the knowledge about absence, attendance and invariability of imagoes inside this important wetland.

Introduction

Beetle imagoes create an important part of floodplain forest zoocenosis. Not only during single vegetation period but also in several following years comes to the changes in species density, abundance, dominancy, to various differences in permanency or diversity and equitability of the species. Monitoring of these long time changes is valuable mainly for environmental studies and the influence of anthropogenous factors on biocenosis. So far very little attention was payed to the species spectrum as well as to the watching of quantitative, structural and relational characters of the floodplain forest zoocenosis. Litovelské Pomoraví is no exception, though here several research projects were extended for more years. The first contribution was the list of beetles from the collection in the localities near Olomouc (Klug, 1855). Faunistic and ecological observation of beetles living also on the territory of CHKO Litovelské Pomoraví (Hudeček – 1930a, 1930b, Šimeček – 1975). The biggest attention was held on ground beetles (Carabidae) – i. e. B. Novák (1973). Špicarová (1978) got the numerous material by sieve method in floodplain forest. More or less in detail the

works of another authors deal with selected beetle families. Majer (1980) with family Catopidae and Bocák et. al. (1982) with family Serropalpidae, the faunistic knowledge prevails in their works.

Material and methods

The research of species composition of beetle imagoes living in herbal strata inside floodplain forest was taken in the years 1989 till 1993. For this purpose I used the sweeping method. Ten sites were selected and the samples were taken in approx. three weeks intervals. I worked always in the afternoon and I was using the net with 40 cm in diameter, on 60 cm long stick.

Results

During four years research I have recorded 228 species of beetle imagoes belonging to 34 families, when the number of families was similar every year and moved in the range from 21 to 24 families.

When we use the scale of constancy according to Tischler (1947), then from the table 1 is visible that the number of accidental families was 50 %, accesorical 17 % and euconstant 18 %. To the accidental belonged 12 families, 8 families were accesorical and 7 families were as constant. Remained 7 families were very permanent in herbal strata of the floodplain forest, i. e. euconstant. There were Staphylinidae, Elateridae, Cantharidae, Dasytidae, Malachiidae, Kateretidae, Nitidulidae, Phalacridae, Byturidae, Coccinellidae, Chrysomelidae and Curculionidae families.

The number of recorded species was moving during different years in the range from 97 to 133 (tab. 2). The number of accidental species was 115, which represents 50 %, accesorical was 38, i. e. 17 % and constant 34 species, i. e. 15 %. Euconstant species were 41, which creates 18 %. A large number of species was accidental.

As for the individual species from the numerous families the share of accidental species was on different level. In Carabidae family these species created 83 %, in Staphylinidae 44 %, in Elateridae 40 %, in Cantharidae 56 %. Accidental lady-bird species occurred in 39 %, 71 % of accidental species was at longicorn beetles, 50 % at Chrysomelidae and 51 % at Curculionidae.

The biggest share of constant and euconstant species from the above mentioned families were synecologically important the species of Coccinellidae with 61 %, Elateridae 60 % of the species, then followed by family Staphylinidae with 56 % of important species, imagoes of the family Chrysomelidae reached the level 50 %. Under the half of synecologically important species was the family Curculionidae (49 %), Cantharidae (44 %), Cerambycidae (29 %) and Carabidae (17 %).

In the families Carabidae, Staphylinidae and Cerambycidae there were no species with the constancy 100 %. In Elateridae the highest value of this was recorded at the species *Athous haemorrhoidalis* and *Athous vittatus*. From the Cantharidae family during all research years occurred imagoes only of two species, *Cantharis livida* and *Cantharis rustica*. In Coccinellidae there were imagoes of the species *Brumus quadri-*

pustulatus, *Adalia bipunctata*, *Coccinella septempunctata*, *Propylea quatuordecimpunctata* and *Psyllobora vigintiduopunctata*. Inside the family Chrysomelidae there were imagoes of the species *Orsodacne cerasi*, *Oulema gallaeciana*, *Phyllotreta atra*, *Phyllotreta nigripes*, *Phyllotreta striolata*, *Phyllotreta vittula*, *Longitarsus luridus*, *Hermeophaga mercurialis*, *Crepidodera aurata*, *Chaetocnema concinna* and *Psylliodes napi*.

The family Curculionidae was with full constancy represented by the species *Apion assimile*, *Apion trifolii*, *Phyllobius argentatus*, *Liophloeus lentus*, *Sciaphilus asperatus*, *Sitona lineatus*, *Sitona sulcifrons*, *Curculio glandium*, *Ceutorhynchus erysimi*, *Ceutorhynchus pallidactylus* and *Nedyus quadrimaculatus*.

Table 1 The list of families recorded in floodplain forest in different A53 years (C-constancy)

Čeled'	1989	1990	1991	1993	C
<i>Carabidae</i>	+	-	+	+	75
<i>Silphidae</i>	+	+	+	-	75
<i>Scaphidiidae</i>	-	-	-	+	25
<i>Staphylinidae</i>	+	+	+	+	100
<i>Lucanidae</i>	+	-	-	-	25
<i>Geotrupidae</i>	+	-	+	-	50
<i>Scarabaeidae</i>	-	+	+	+	75
<i>Byrrhidae</i>	-	-	+	-	25
<i>Buprestidae</i>	-	+	+	+	75
<i>Elateridae</i>	+	+	+	+	100
<i>Lycidae</i>	+	-	-	-	25
<i>Cantharidae</i>	+	+	+	+	100
<i>Ptinidae</i>	-	+	+	-	50
<i>Cleridae</i>	-	-	-	+	25
<i>Dasytidae</i>	+	+	+	+	100
<i>Malachiidae</i>	+	+	+	+	100
<i>Kateretidae</i>	+	+	+	+	100
<i>Nitidulidae</i>	+	+	+	+	100
<i>Phalacridae</i>	+	+	+	+	100
<i>Cryptophagidae</i>	-	+	+	-	50
<i>Byturidae</i>	+	+	+	+	100
<i>Coccinellidae</i>	+	+	+	+	100
<i>Latridiidae</i>	+	+	+	-	75
<i>Oedemeridae</i>	-	+	-	+	50
<i>Pyrochroidae</i>	-	-	+	+	50
<i>Scraptiidae</i>	+	-	-	+	50
<i>Salpingidae</i>	+	-	-	-	25
<i>Lagriidae</i>	-	-	-	+	25
<i>Cerambycidae</i>	-	+	+	+	75
<i>Chrysomelidae</i>	+	+	+	+	100
<i>Bruchidae</i>	+	-	+	+	75
<i>Anthribidae</i>	+	+	-	-	50
<i>Curculionidae</i>	+	+	+	+	100
<i>Scolytidae</i>	-	-	+	-	25

Table 2 The list of species recorded in floodplain forest in different years (C-constancy)

Species	1989	1990	1991	1993	C
Carabidae					
<i>Poecilus cupreus</i> (Linnaeus, 1758)	-	-	-	+	25
<i>Agonum sexpunctatum</i> (Linnaeus, 1758)	+	-	-	-	25
<i>Amara familiaris</i> (Duftschmid, 1812)	+	-	-	-	25
<i>Amara similata</i> (Gyllenhal, 1810)	+	-	-	+	50
<i>Lebia chlorocephala</i> (Hoffmann., 1803)	-	-	+	-	25
<i>Demetrias atricapillus</i> (Linnaeus, 1758)	+	-	-	-	25
Silphidae					
<i>Oiceoptoma thoracica</i> (Linnaeus, 1758)	-	-	+	-	25
<i>Phosphuga atrata</i> (Linnaeus, 1758)	+	+	-	-	50
Scaphidiidae					
<i>Scaphidium quadrimaculatum</i> (Olivier, 1790)	-	-	-	+	25
Staphylinidae					
<i>Eusphalerum anale</i> (Erichson, 1840)	+	+	+	-	75
<i>Eusphalerum marshami</i> (Fauvel, 1868)	-	-	-	+	25
<i>Oxytelus rugosus</i> (Fabricius, 1775)	+	+	-	-	50
<i>Anotylus sculpturatus</i> (Gravenhorst, 1806)	-	+	-	-	25
<i>Stenus biguttatus</i> (Linnaeus, 1758)	-	+	-	-	25
<i>Stenus bimaculatus</i> (Gyllenhal, 1810)	+	-	-	-	25
<i>Paederus litoralis</i> (Gravenhorst, 1802)	+	+	-	-	50
<i>Stenus similis</i> (Herbst, 1784)	+	+	-	-	50
<i>Philonthus carbonarius</i> (Gravenhorst, 1802)	+	-	-	-	25
<i>Philonthus cognatus</i> (Stephens, 1832)	+	-	-	-	25
<i>Tachyporus chrysomelinus</i> (Linnaeus, 1758)	+	+	-	-	50
<i>Tachyporus hypnorum</i> (Fabricius, 1775)	+	+	+	-	75
<i>Tachyporus obtusus</i> (Linnaeus, 1767)	+	+	+	-	75

<i>Tachyporus pusillus</i> (Gravenhorst, 1806)	-	-	-	+	25
<i>Tachyporus solutus</i> (Erichson, 1839)	+	+	+	-	75
<i>Tachinus signatus</i> (Gravenhorst, 1802)	+	-	+	+	75
Lucanidae					
<i>Platycerus caprea</i> (De Geer, 1774)	+	-	-	-	25
Geotrupidae					
<i>Anoplotrupes stercorosus</i> (Hartmann in Scriba, 1791)	+	-	+	-	50
Scarabaeidae					
<i>Aphodius depressus</i> (Kugelann, 1792)	-	+	-	-	25
<i>Aphodius distinctus</i> (O. F. Müller, 1776)	-	+	+	-	50
<i>Valgus hemipterus</i> (Linnaeus, 1758)	-	-	-	+	25
Byrrhidae					
<i>Byrrhus pilula</i> (Linnaeus, 1758)	-	-	+	-	25
Buprestidae					
<i>Agrilus graminis</i> (Laporte de Castelnau et Gory, 1837)	-	+	+	+	75
Elateridae					
<i>Agrypnus murinus</i> (Linnaeus, 1758)	-	-	-	+	25
<i>Athous haemorrhoidalis</i> (Fabricius, 1801)	+	+	+	+	100
<i>Athous vittatus</i> (Fabricius, 1792)	+	+	+	+	100
<i>Athous subfuscus</i> (O. F. Müller, 1767)	-	+	+	+	75
<i>Athous bicolor</i> (Goeze, 1777)	-	-	+	+	50
<i>Kibunea minuta</i> (Linnaeus, 1758)	-	-	-	+	25
<i>Nothodes parvulus</i> (Panzer, 1799)	-	+	-	-	25
<i>Denticollis linearis</i> (Linnaeus, 1758)	-	+	+	+	75
<i>Stenagostus rhombeus</i> (Olivier, 1790)	-	+	-	-	25
<i>Hemicrepidius hirtus</i> (Herbst, 1784)	-	+	+	-	50

<i>Ampedus pomorum</i> (Herbst, 1784)	-	-	-	+	25
<i>Dalopius marginatus</i> (Linnaeus, 1758)	+	+	+	-	75
<i>Agriotes brevis</i> (Candèze, 1863)	-	+	-	-	25
<i>Agriotes sputator</i> (Linnaeus, 1785)	-	-	+	+	50
<i>Agriotes ustulatus</i> (Schaller, 1783)	-	-	+	+	50
Lycidae					
<i>Platycis cosnardi</i> (Chevrolat, 1838)	+	-	-	-	25
Cantharidae					
<i>Cantharis fulvicollis</i> (Fabricius, 1792)	-	-	-	+	25
<i>Cantharis fusca</i> (Linnaeus, 1758)	-	-	-	+	25
<i>Cantharis livida</i> (Linnaeus, 1758)	+	+	+	+	100
<i>Cantharis nigricans</i> (O. F. Müller, 1776)	-	-	-	+	25
<i>Cantharis rufa</i> (Linnaeus, 1758)	-	-	-	+	25
<i>Cantharis rustica</i> (Fallén, 1807)	+	+	+	+	100
<i>Metacantharis haemorrhoidalis</i> (Fabricius, 1792)	-	-	-	+	25
<i>Rhagonycha elongata</i> (Fallén, 1807)	-	+	+	+	75
<i>Rhagonycha fulva</i> (Scopoli, 1763)	-	+	+	+	75
Ptinidae					
<i>Ptinus rufipes</i> (Olivier, 1790)	-	+	+	-	50
Cleridae					
<i>Korynetes coeruleus</i> (De Geer, 1775)	-	-	-	+	25
Dasytidae					
<i>Dasytes plumbeus</i> (O. F. Müller, 1776)	+	+	+	+	100
Malachiidae					
<i>Axinotarsus pulicarius</i> (Fabricius, 1775)	-	-	-	+	25
<i>Axinotarsus ruficollis</i> (Olivier, 1790)	-	-	-	+	25
<i>Clanoptilus viridis</i> (Fabricius, 1787)	-	-	-	+	25

<i>Malachius bipustulatus</i> (Linnaeus, 1758)	+	+	+	+	100
Kateretidae					
<i>Brachypterus urticae</i> (Fabricius, 1792)	+	+	+	+	100
Nitidulidae					
<i>Epurea depressa</i> (Illiger, 1798)	+	+	+	-	75
<i>Meligethes aeneus</i> (Fabricius, 1775)	+	+	+	-	75
<i>Meligethes coracinus</i> (Sturm, 1845)	+	+	+	+	100
Phalacridae					
<i>Olibrus aeneus</i> (Fabricius, 1792)	+	+	+	+	100
<i>Stilbus testaceus</i> (Panzer, 1797)	+	+	+	+	100
Cryptophagidae					
<i>Atomaria linearis</i> (Stephens, 1830)	-	+	+	-	50
Byturidae					
<i>Byturus ochraceus</i> (L. G. Scriba, 1790)	+	+	+	+	100
Coccinellidae					
<i>Scymnus auritus</i> (Thunberg, 1795)	+	-	-	-	25
<i>Scymnus femoralis</i> (Gyllenhal, 1827)	-	-	+	+	50
<i>Scymnus nigrinus</i> (Kugelann, 1794)	-	-	-	+	25
<i>Scymnus rubromaculatus</i> (Goeze, 1777)	-	-	-	+	25
<i>Hyperaspis campestris</i> (Herbst, 1783)	-	-	-	+	25
<i>Brumus quadripustulatus</i> (Linnaeus, 1758)	+	+	+	+	100
<i>Chilocorus bipustulatus</i> (Linnaeus, 1758)	+	+	+	-	75
<i>Adalia bipunctata</i> (Linnaeus, 1758)	+	+	+	+	100
<i>Adalia decempunctata</i> (Linnaeus, 1758)	+	+	+	-	75
<i>Hippodamia variegata</i> (Goeze, 1777)	+	-	-	-	25
<i>Coccinella quinquepunctata</i> (Linnaeus, 1758)	-	-	+	+	50
<i>Coccinella septempunctata</i> (Linnaeus, 1758)	+	+	+	+	100

<i>Propylea quatuordecimpunctata</i> (Linnaeus, 1758)	+	+	+	+	100
<i>Calvia decemguttata</i> (Linnaeus, 1767)	+	+	+	-	75
<i>Calvia quatuordecimguttata</i> (Linnaeus, 1758)	-	+	+	+	75
<i>Anatis ocellata</i> (Linnaeus, 1758)	+	-	-	-	25
<i>Psyllobora vigintiduopunctata</i> (Linnaeus, 1758)	+	+	+	+	100
<i>Halyzia sedecimguttata</i> (Linnaeus, 1758)	-	+	-	-	25
Latridiidae					
<i>Latridius minutus</i> (Linnaeus, 1767)	+	+	-	-	50
<i>Corticara gibbosa</i> (Herbst, 1793)	+	+	+	-	75
Oedemeridae					
<i>Oedemera virescens</i> (Linnaeus, 1767)	-	+	-	+	50
Pyrochroidae					
<i>Pyrochroa serraticornis</i> (Scopoli, 1763)	-	-	+	+	50
<i>Schizotus pectinicornis</i> (Linnaeus, 1758)	-	-	-	+	25
Scraptiidae					
<i>Anaspis frontalis</i> (Linnaeus, 1758)	+	-	-	+	50
Salpingidae					
<i>Salpingus ruficollis</i> (Linnaeus, 1761)	+	-	-	-	25
Lagriidae					
<i>Lagria hirta</i> (Linnaeus, 1758)	-	-	-	+	25
Cerambycidae					
<i>Clytus arietis</i> (Linnaeus, 1758)	-	-	-	+	25
<i>Stenocorus quercus</i> (Goetz, 1783)	-	-	-	+	25
<i>Stenocorus meridianus</i> (Linnaeus, 1758)	-	-	+	+	50
<i>Rhagium mordax</i> (De Geer, 1775)	-	-	-	+	25
<i>Dinoptera collaris</i> (Linnaeus, 1758)	-	-	-	+	25
<i>Pidonia lurida</i> (Fabricius, 1792)	-	+	-	-	25

<i>Grammoptera ruficornis</i> (Fabricius, 1781)	-	+	+	+	75
<i>Grammoptera ustulata</i> (Schaller, 1783)	-	-	+	-	25
<i>Pseudovadonia livida</i> (Fabricius, 1776)	-	-	-	+	25
<i>Stenurella melanura</i> (Linnaeus, 1758)	-	+	+	+	75
<i>Agapanthia villosviridescens</i> (De Geer, 1775)	-	-	-	+	25
<i>Pogonocherus hispidus</i> (Linnaeus, 1758)	-	-	+	-	25
<i>Tetrops starki</i> (Chevrolat, 1859)	-	-	+	-	25
<i>Leiopis nebulosus</i> (Linnaeus, 1758)	-	+	+	-	50
Chrysomelidae					
<i>Orsodacne cerasi</i> (Linnaeus, 1758)	+	+	+	+	100
<i>Oulema gallaeciana</i> (Heyden, 1870)	+	+	+	+	100
<i>Oulema melanopus</i> (Linnaeus, 1758)	+	+	+	+	100
<i>Smaragdina salicina</i> (Scopoli, 1763)	-	-	-	+	25
<i>Cryptocephalus hypochoeridis</i> (Linnaeus, 1758)	-	-	-	+	25
<i>Cryptocephalus moraei</i> (Linnaeus, 1758)	-	-	-	+	25
<i>Cryptocephalus rufipes</i> (Goeze, 1777)	-	+	-	-	25
<i>Oomorphus concolor</i> (Sturm, 1807)	+	+	+	-	75
<i>Adoxus obscurus</i> (Linnaeus, 1758)	-	-	-	+	25
<i>Leptinotarsa decemlineata</i> (Say, 1824)	-	-	+	+	50
<i>Chrysolina polita</i> (Linnaeus, 1758)	-	-	+	-	25
<i>Chrysolina staphylea</i> (Linnaeus, 1758)	-	-	+	+	50
<i>Fastuolina fastuosa</i> (Scopoli, 1763)	-	+	+	+	75
<i>Gastrophysa polygoni</i> (Linnaeus, 1758)	-	-	-	+	25
<i>Gastrophysa viridula</i> (De Geer, 1775)	+	-	+	+	75
<i>Phaedon armoraciae</i> (Linnaeus, 1758)	+	-	-	-	25
<i>Chrysomela saliceti</i> (Weise, 1884)	-	+	-	-	25
<i>Gonioctena decemnotata</i> (Marsham, 1802)	-	+	-	-	25

<i>Gonioctena quinquepunctata</i> (Fabricius, 1787)	+	-	-	-	25
<i>Sermylassa halensis</i> (Linnaeus, 1767)	-	-	-	+	25
<i>Phyllotreta atra</i> (Fabricius, 1775)	+	+	+	+	100
<i>Phyllotreta nemorum</i> (Linnaeus, 1758)	-	-	+	-	25
<i>Phyllotreta nigripes</i> (Fabricius, 1775)	+	+	+	+	100
<i>Phyllotreta striolata</i> (Fabricius, 1803)	+	+	+	+	100
<i>Phyllotreta vittula</i> (L. Redtenbacher, 1849)	+	+	+	+	100
<i>Longitarsus anchusae</i> (Paykull, 1799)	-	-	-	+	25
<i>Longitarsus luridus</i> (Scopoli, 1763)	+	+	+	+	100
<i>Longitarsus lycopi</i> (Foudras, 1859)	+	-	-	-	25
<i>Longitarsus melanocephalus</i> (De Geer, 1775)	+	-	+	+	75
<i>Longitarsus nasturtii</i> (Fabricius, 1792)	-	-	+	-	25
<i>Altica oleracea</i> (Linnaeus, 1758)	-	-	+	-	25
<i>Hermeophaga mercurialis</i> (Fabricius, 1792)	+	+	+	+	100
<i>Asiolestia ferruginea</i> (Scopoli, 1763)	-	-	-	+	25
<i>Crepidodera aurata</i> (Marsham, 1802)	+	+	+	+	100
<i>Crepidodera aurea</i> (Geoffroy, 1785)	+	+	+	+	100
<i>Epitrix pubescens</i> (Koch, 1803)	-	-	-	+	25
<i>Chaetocnema concinna</i> (Marsham, 1802)	+	+	+	+	100
<i>Chaetocnema arida</i> (Foudras, 1859)	-	-	+	+	50
<i>Apteropeda orbiculata</i> (Marsham, 1802)	+	-	-	-	25
<i>Psylliodes affinis</i> (Paykull, 1799)	-	-	-	+	25
<i>Psylliodes chrysocephala</i> (Linnaeus, 1758)	-	+	+	-	50
<i>Psylliodes napi</i> (Fabricius, 1792)	+	+	+	+	100
Bruchidae					
<i>Bruchus atomarius</i> (Linnaeus, 1761)	-	-	+	-	25
<i>Bruchus pisorum</i> (Linnaeus, 1758)	+	-	-	-	25

<i>Bruchidius varius</i> (Olivier, 1795)	-	-	-	+	25
<i>Anthribidae</i>					
<i>Brachytarsus nebulosus</i> (Forster, 1771)	+	+	-	-	50
<i>Curculionidae</i>					
<i>Lasiornychites cavifrons</i> (Gyllenhal, 1833)	+	-	-	-	25
<i>Apion frumentarium</i> (Linnaeus, 1758)	-	-	-	+	25
<i>Apion haematodes</i> (Kirby, 1808)	-	-	-	+	25
<i>Apion pallipes</i> (Kirby, 1808)	+	+	+	-	75
<i>Apion urticarium</i> (Herbst, 1784)	-	+	-	+	50
<i>Apion seniculus</i> (Kirby, 1808)	+	+	+	-	75
<i>Apion gibbirostre</i> (Gyllenhal, 1813)	-	-	-	+	25
<i>Apion onopordi</i> (Kirby, 1808)	-	-	-	+	25
<i>Apion tenue</i> (Kirby, 1808)	-	-	-	+	25
<i>Apion pisi</i> (Fabricius, 1801)	-	+	+	+	75
<i>Apion ervi</i> (Kirby, 1811)	-	+	-	-	25
<i>Apion pomonae</i> (Fabricius, 1798)	-	+	-	-	25
<i>Apion virens</i> (Herbst, 1797)	+	+	+	+	100
<i>Apion apricans</i> (Herbst, 1797)	+	+	+	+	100
<i>Apion assimile</i> (Kirby, 1808)	+	+	+	+	100
<i>Apion fulvipes</i> (Fourcroy, 1785)	-	-	+	-	25
<i>Apion trifolii</i> (Linnaeus, 1768)	+	+	+	+	100
<i>Otiorhynchus scaber</i> (Linnaeus, 1758)	-	+	-	-	25
<i>Phyllobius cloropus</i> (Linnaeus, 1758)	-	-	+	+	50
<i>Phyllobius arborator</i> (Herbst, 1797)	-	-	+	-	25
<i>Phyllobius argentatus</i> (Linnaeus, 1758)	+	+	+	+	100
<i>Phyllobius calcaratus</i> (Fabricius, 1792)	-	+	+	+	75
<i>Phyllobius maculicornis</i> (Germar, 1824)	-	-	-	+	25

<i>Phyllobius pomaceus</i> (Gyllenhal, 1824)	-	+	+	+	75
<i>Phyllobius pyri</i> (Linnaeus, 1758)	-	-	-	+	25
<i>Polydrusus pilosus</i> (Gredler, 1866)	-	+	-	-	25
<i>Polydrusus undatus</i> (Fabricius, 1781)	+	+	+	-	75
<i>Polydrusus sericeus</i> (Schaller, 1783)	+	+	-	-	50
<i>Polydrusus mollis</i> (Ström, 1768)	-	+	+	-	50
<i>Liophloeus lentus</i> (Germar, 1824)	+	+	+	+	100
<i>Eusomus ovulum</i> (Germar, 1824)	-	-	+	+	50
<i>Sciaphilus asperatus</i> (Bonsdorff, 1785)	+	+	+	+	100
<i>Sitona hispidulus</i> (Fabricius, 1776)	-	+	+	+	75
<i>Sitona humeralis</i> (Stephens, 1831)	-	+	-	+	50
<i>Sitona lineatus</i> (Linnaeus, 1758)	+	+	+	+	100
<i>Sitona macularis</i> (Marsham, 1902)	-	-	-	+	25
<i>Sitona puncticollis</i> (Stephens, 1831)	-	+	-	-	25
<i>Sitona sulcifrons</i> (Thunberg, 1798)	+	+	+	+	100
<i>Tanymecus palliatus</i> (Fabricius, 1787)	+	-	-	-	25
<i>Tychius picirostris</i> (Fabricius, 1787)	-	-	-	+	25
<i>Tychius stephensi</i> (Schönherr, 1836)	-	-	-	+	25
<i>Curculio glandium</i> (Marsham, 1802)	+	+	+	+	100
<i>Curculio nucum</i> (Linnaeus, 1758)	-	+	+	-	50
<i>Curculio pyrrhoceras</i> (Marsham, 1802)	-	-	+	-	25
<i>Curculio salicivorus</i> (Paykull, 1792)	-	-	+	+	50
<i>Magdalis ruficornis</i> (Linnaeus, 1758)	-	+	-	-	25
<i>Trachodes hispidus</i> (Linnaeus, 1758)	+	+	-	-	50
<i>Leiosoma deflexum</i> (Panzer, 1795)	+	+	+	-	75
<i>Alophus triguttatus vau</i> (Schrank, 1781)	-	-	+	-	25
<i>Hypera nigrirostris</i> (Fabricius, 1775)	+	+	-	+	75

<i>Hypera zoila</i> (Scopoli, 1763)	-	-	-	+	25
<i>Acalles camelus</i> (Fabricius, 1792)	-	+	-	-	25
<i>Acales echinatus</i> (Germar, 1824)	-	+	-	-	25
<i>Acallocrates denticollis</i> (Germar, 1824)	-	-	+	-	50
<i>Rhinoncus perpendicularis</i> (Reich, 1797)	+	-	-	+	50
<i>Scleropterus serratus</i> (Germar, 1824)	+	-	-	-	25
<i>Coeliodes dryados</i> (Gmelin, 1790)	-	-	+	-	25
<i>Zacladus geranii</i> (Paykull, 1800)	-	-	-	+	25
<i>Ceutorhynchus floralis</i> (Paykull, 1792)	-	+	+	-	50
<i>Ceutorhynchus constrictus</i> (Marsham, 1802)	-	+	-	-	25
<i>Ceutorhynchus erysimi</i> (Fabricius, 1787)	+	+	+	+	100
<i>Ceutorhynchus napi</i> (Gyllenhal, 1837)	-	-	-	+	25
<i>Ceutorhynchus obstructus</i> (Marsham, 1802)	-	-	-	+	25
<i>Ceutorhynchus pallidactylus</i> (Marsham, 1802)	+	+	+	+	100
<i>Ceutorhynchus pleurostigma</i> (Marsham, 1802)	+	-	-	-	25
<i>Mogulones abbreviatulus</i> (Fabricius, 1792)	-	-	-	+	25
<i>Mogulones larvatus</i> (Schultze, 1896)	-	+	-	-	25
<i>Mogulones symphyti</i> (Bedel, 1885)	-	-	-	+	25
<i>Nedyus quadrimaculatus</i> (Linnaeus, 1758)	+	+	+	+	100
Scolytidae					
<i>Dryocoetes autographus</i> (Ratzeburg, 1837)	-	-	+	-	25

Discussion

The species spectrum gained inside floodplain forest indicates the occurrence of those species, which live here monophagously on its nutrient plants, e. g. imagoes of *Hermeophaga mercurialis*, which currently live in shady forests on *Mercurialis perennis* (Fleischer, 1927–1930, Harde, Freude, Lohse, 1966). Much bigger percentage of the species occurs here incidentally and because of its oligophagy or even polygophagy they migrate to the dark outlines of forest edges. These dark outlines in contrast with light sky are usually important for the space orientation of the insects (Courtier and

Robert, 1952; Schwerdtfeger, 1963) and through marginal vegetation they fly into the forest interior where they feed. Due to different life condition the density of these species is less (Obrtel, 1957; Tischler, 1950). They can appear here either individually or certain species in high concentration. We can find species typical for meadows or for meadow and lucerne fields.

Here belong for example the species of the families Elateridae, Cantharidae, Malachiidae, Nitidulidae, Coccinellidae, Chrysomelidae and Curculionidae. Here occurs also a large number of species living in wet habitats to which floodplain forest certainly belongs. Here is necessary to mention for example some species of family Carabidae, Staphylinidae, but also Elateridae. An important group is created by those species, which generally occur in shrubs and tree strata, but can be also caught on plants of the herbal strata.

Majzlan and Rychlík (1982) worked on inventory research near Bratislava and determined 647 species, which belonged to 58 families. This high number was influenced because of including the water species too, epigeous to floodplain forest and meadows. In comparison of species spectrum of herbal strata, the diversity of floodplain forest in Litovelské Pomoraví significantly prevailed.

Mazlan and Durmek (1988) recorded only 20 families, but a big amount of the species was coincident with the species of my collection.

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