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# THE HARMFUL ENTOMOFAUNA OF WOODY PLANTS IN SLOVAKIA

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ABSTRACT: Research on mapping of the entomofauna and determination of its qualitative structure was carried out in the city of Nitra during the years 2003-2006. The research was focused on insect pests damaging woody species in urban conditions. The monitored areas included several categories of the city's greenery. The material and information (damage symptoms, imagoes, larvae, etc.) assembled during field work on the selected areas were analyzed by laboratory methods and using available literature sources. Altogether, 225 species of insect pests were detected. Of this amount number, non-indigenous species comprised cca 8%. The detected pests were mainly insects of the order *Lepidoptera*. Some non-indigenous insect species occur in the town in great numbers that often reach disastrous levels. The species recorded include *Cameraria ohridella* (Deschka & Dimić, 1986), *Phyllonorycter platani* (Staudinger, 1870), *Hyphantria cunea* (DRURY, 1773), and *Dasyneura gleditsiae* (Osten Sacken, 1866). Besides these important species, we also determined indigenous polyphagous butterfly species from the family Limantriidae. The appearance of these species (called defoliators) in increasing numbers is causing massive injuries to woody plants in urban conditions.

KEY WORDS: woody species, insect pests, non-indigenous species, urban environments

## INTRODUCTION

Woody plants growing under the influence of various harmful factors of city life, and in changed ecological conditions are highly susceptible to different diseases and pests, their ornamental value is lowered, and they usually tend to wither completely (HRUBIK, 1988). In recent years in Europe, there has been growing fear of random introduction of non-indigenous plants and biotic pest species. Although co-operation on the international level in the sphere of quarantine pests is realized through activity of thr European Plant Protection Organization (EPPO), this possibility cannot be excluded. Wittingly or accidentally introduced species, due to the absence native enemies and changing conditions, can suddenly become dominant in the new environment (HRUBIK *et al.*, 2002).

Non-indigenous insect pest species generally reach urban environments owing to their presence on introduced woody plants. Small species can drift on air currents or be carried by some other natural way of transport. This group of pests mainly includes monophagous species, among

which are ones that cause important and serious injuries to their host woody plants [*Cameraria ohridella* (Deschka & Dimić, 1986), *Phyllonorycter platani* (Staudinger, 1870), *Bruchophagus sophorae* (Crosby & Crosby, 1929), etc.]. Indigenous species of pests of urban greenery usually arrive from surrounding woods and fruit orchards. They are mainly polyphagous. These pests are already adapted to altered environmental conditions and trophically to foreign woody plants, which are often used in city plantings. The prerequisite condition for successful protection against the spreading of domestic and introduced insect pest species is correct diagnosis through recognition of symptoms and a knowledge of harmful factors.

The aim of this work was to map and evaluate the ocurrence of individual insect pest species on woody plants in an urban environment and determine their structure in the city of Nitra.

## MATERIALS AND METHODS

The study was conducted in the city of Nitra, situated in the western part of the Slovak Republic at 48º 14' E longitude. The city's geographical position is very favorable. The city center lies on a plain, at an altitude of 140 m above sea level. This plain runs through almost the whole city area.

The plain was created by geological activity of the Nitra River in the post-Tertiary period. The oldest part of Nitra and its neighborhood is the region of the Zobor Hills, the southernmost spurs of the Tríbeč mountains. The Zobor Hills belong to the Carpathian Range. The mountains consist mainly of plutonites and metamorphites. The Zobor Hills have two parts. The front part is lower and composed of quartzite (5 55.7 m), the back part of calcite.

The climate of region ranges from semiarid to humid. Maximal precipitation is 600 mm.

Mean annual temperatures in this region range around a value of 10 ºC. The warmest month is usually July, sometimes June or August. The arrival of spring in Nitra is sudden. Temperature maxima of about 15 ºC occur already in March. Summer is warm, and days with a maximum above 30 ºC are frequent. Autumn is dry, and winter is mild with light snowfall. Frosts are infrequent. The city of Nitra is quite windy.

There are many trees in Nitra. The dominant woody plant is oak (*Quercus robur* L., *Q. cerris* L., and *Q. pubescens* Willd.). Hornbeam (*Carpinus betulus* L.) is also present (AMBRUŠ *et al.*, 1977).

For research purposes, we selected areas with different categories of urban greenery (river quay, interblock vegetation, street greenery, spontaneous roadside vegetation). Harmful insect species were noted according to individual localities (research areas) and host plants. Samples were collected in the field, and more detailed processing was carried out in laboratory conditions. Species of host plants and insect pests were determined in the laboratory. Microscopic techniques were used to determine of some species. Finally, the found species were classified systematically, in tabular form according to host plants. The color yellow indicates species non-indigenous for Slovakia.

## RESULTS

Table 1 documents the results of mapping the harmful entomofauna on woody plants in the city of Nitra during the period of 2003 - 2006.

Table 1. Summary of insect pest species detected on woody plants in the city of Nitra.

| Order | Family | Species | Host plant |
|---|---|---|---|
| *Auchenorrhyncha* | *Jassidae* | *Tettigella viridis* (LINNAEUS, 1758) | *Acer platanoides* L., *A. pseudoplatanus* L., *A. campestre* L., *A. monspessulanum* L., *A. saccharinum* L., A. tataricum L. |
| | | *Ribautiana ulmi* (LINNAEUS, 1758) | *Ulmus glabra* Huds., *U. laevis* Pall. |
| *Acarina* | *Eriophyidae* | *Aceria macrorrhynchus* NALEPA, 1889 | *Acer pseudoplatanus* L., *A. campestre* L. |
| | | *Aceria macrochelus* NALEPA, 1891 | *Acer campestre* L. |
| | | *Aceria tristriata* (NALEPA, 1890) | *Juglans regia* L. |
| | | *Aceria erinea* (NALEPA, 1891) | *Juglans regia* L. |
| | | Aceria populi NALEPA, 1890 | *Populus alba* L. |
| | | *Eriophyes padi* DOMES, 2000 | *Prunus avium* L., *P. padus* L. |
| | | *Eriophyes macrotrichus* NALEPA, 1889 | *Carpinus betulus* L. |
| | | *Eriophyes convolvens* (NALEPA, 1892) | *Euonymus europaeus* L. |
| | | *Eriophyes fraxinivorus* NALEPA, 1909 | *Fraxinus excelsior* L., *F. ornus* L. |
| | | *Aculus tetanothrix v. craspedobius* NALEPA, 1889 | *Salix alba* L. |
| | | *Aculus tetanothrix v. laevis* NALEPA, 1889 | *Salix alba* L. |
| | | *Eriophyes triradiatus* NALEPA, 1892 | *Salix alba* L. |
| | | *Eriophyes tiliae tiliae* NALEPA, 1890 | *Tilia platyphyllos* Scop., *T. cordata* Mill., *T. americana* L. |
| | | *Eriophyes tiliae v. nervalis* NALEPA, 1890 | *Tilia cordata* Mill., *T. platyphyllos* Scop. |
| | | *Eriophyes tiliae v. leiosoma* NALEPA, 1892 | *Tilia platyphyllos* Scop., *T. cordata* Mill. |
| | | *Eriophyes tiliae v. exilis* NALEPA, 1892 | *Tilia platyphyllos* Scop., *T. cordata* Mill. |
| | | *Phytoptus tetratrichus* NALEPA, 1891 | *Tilia platyphyllus* Scop., *T. cordata* Mill. |
| | | *Vasates quadripes* SCHIMER, 1869 | *Acer saccharinum* L. |
| | | *Cecidophyes psilaspis* NALEPA, 1893 | *Taxus baccata* L. |
| | *Tetranichidae* | *Eotetranychus aesculi* (RECK) PRITCHARD & BAKER., 1955 | *Aesculus hippocastanum* L. |
| | | *Eotetranychus carpini* (OUDEMANS, 1905) | *Carpinus betulus* L. |

Table 1. Continued.

| Order | Family | Species | Host plant |
|---|---|---|---|
| *Acarina* | *Tetranichidae* | *Eotetranychus tiliarum* (HERMAN, 1804) | *Tilia platyphyllos* Scop. |
| | | *Metatetranychus ulmi* (KOCH, 1836) | *Aesculus hippocastanum* L., *Ulmus glabra* Huds. |
| *Lepidoptera* | *Gracillariidae* | *Parna tenella* KLUG, 1816 | *Tilia cordata* Mill., *Tilia platyphyllos* Scop. |
| | | *Xanthospilapteryx syringella* (FABRICIUS, 1794) | *Fraxinus excelsior* L.., *F. ornus* L., *Ligustrum vulgare* L., *Syringa vulgaris* L., Sambucus nigra L. |
| | | *Phyllonorycter acernella* ZELLER, 1846 | *Acer platanoides* L., *A. pseudoplatanus* L. |
| | | *Phyllonorycter acerifoliella* ZELLER, 1839 | *Acer pseudoplatanus* L., *A. tataricum* L. |
| | | *Phyllonorycter platanoidella* JOANNIS, 1920 | *Acer platanoides* L., *A. pseudoplatanus* L., *A. campestre* L. |
| | | *Phyllonorycter ulmifoliella* (HÜBNER, 1817) | *Ulmus glabra* Huds., *U. laevis* Pallas, *Betula verrucosa* Ehrh. |
| | | *Phyllonorycter agilella* ZELLER 1846 | *Ulmus glabra* Huds., *U. laevis* Pallas |
| | | *Phyllonorycter platani* (STAUDINGER 1870) | *Platanus occidentalis* L., *P. x acerifolia* (Ait.) Willd. |
| | | *Phyllonorycter froelichiella* ZELLER 1839 | *Alnus glutinosa* (L.), *Alnus incana* (L.) Moench |
| | | *Phyllonorycter tenerella* JOANNIS, 1915 | *Carpinus betulus* L. |
| | | *Phyllonorycter apparella* HERRICH-SCHÄFFER, 1855 | *Populus alba* L., *P. nigra* L., *P. simonii* Carr. |
| | | *Phyllonorycter spinicolella* ZELLER, 1846 | *Prunus cerasifera* Ehrh., *P. avium* L., *P. spinosa* L. |
| | | *Phyllonorycter lautella* ZELLER, 1846 | *Quercus robur* L., *Q. petraea* (Mattuschka) Liebl. |
| | | *Phyllonorycter salictella* ZELLER, 1846 | *Salix alba* L. |
| | | *Phyllonorycter nicellii* STAINTON, 1851 | *Corylus colurna* L. |
| | | *Phyllonorycter pastorella* ZELLER, 1846 | *Salix alba* L. |
| | | *Phyllonorycter robiniellus* CLEMENS, 1859 | *Robinia pseudoacacia* L., *R. viscosa* Vent. |
| | | *Phyllonorycter quinnata* GEOFFROY, 1851 | *Carpinus betulus* L. |
| | | *Phyllonorycter maestingella* ZELLER, 1764 | *Fagus sylvatica* L. |
| | | *Phyllonorycter roboris* ZELLER, 1839 | *Quercus robur* L., *Q. petraea* (Mattuschka) Liebl., *Q. cerris* L., *Q. dalechampii* Ten. |
| | | *Phyllonorycter issikii* KUMATA, 1963 | *Tilia cordata* Mill., *T. platyphyllos* Scop., *T. americana* L. |
| | | *Phyllonorycter leucographellus* (ZELLER, 1850) | *Pyracantha coccinea* Roem. |

Table 1. Continued.

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|---|---|---|---|
| *Lepidoptera* | *Gracillariidae* | *Parectopa robiniella* CLEMENS, 1863 | *Robinia pseudoacacia* L. |
| | | *Cameraria ohridella* (DESCHKA & DIMIC, 1986) | *Aesculus hippocastanum* L. |
| | | *Acrocercops brongniardella* FABRICIUS, 1798 | *Quercus cerris* L. |
| | | *Parornix finitimella* ZELLER, 1850 | *Prunus cerasifera* Ehrh., *Prunus avium* L. |
| | *Phyllocnistidae* | *Phyllocnistis unipunctella* STEPHENS, 1834 | *Populus alba* L., *P. nigra* L., *P. simonii* Carr. |
| | | *Phyllocnistis saligna* ZELLER, 1839 | *Salix alba* L., *Salix matsudana* Koidz. |
| | | *Phyllocnistis suffusella* ZELLER, 1848 | *Populus deltoides* Bartr. ex Marsh. |
| | *Yponomeutidae* | *Argyresthia thujella* (PACKARD, 1871) | *Thuja occidentalis* L. |
| | *Lyonetiidae* | *Lyonetia clerkella* (LINNAEUS, 1758) | *Betula verrucosa* Ehrh., *Prunus avium* L.., *Prunus subhirtella* Mill., *Malus sp., Crataegus monogyna* Jacq. |
| | *Coleophoridae* | *Coleophora hemorobiella* SCOPOLI, 1763 | *Spiraea x vanhottei* (Briot) Carr., *S. x bumalda* Burv. |
| | | *Coleophora serratella* (LINNAEUS, 1761) | *Spiraea x vanhottei* (Briot) Carr., *S. x bumalda* Burv. |
| | *Tortricidae* | *Laspeyresia fagiglandana* ZELLER, 1841 | *Fagus sylvatica* L. |
| | | *Pammene rhediella* CLERCK, 1759 | *Crataegus monogyna* Jacq. |
| | | *Epinotia tedella* (CLERCK, 1759) | *Picea abies* (L.) Karst., *Picea pungens* Engelm. |
| | | *Epinotia rufimitrana* (HERRICH-SCHÄFFER, 1851) | *Abies alba* Mill. |
| | | *Rhyacionia buoliana* (DENIS & SCHIFFERMÜLLER, 1775) | *Pinus sylvestris* L., *P. nigra* Arnold., *P. ponderosa* C. Laws. |
| | | *Archips piceana* (LINNAEUS, 1758) | *Pinus sylvestris* L. |
| | | *Petrova resinella* LINNAEUS, 1758 | *Pinus sylvestris* L. |
| | | *Pseudargyrotoza conwagana* (FABRICIUS, 1775) | *Fraxinus excelsior* L. |
| | | *Cydia splendana* HÜBNER, 1799 | *Quercus petraea* (Mattuschka) Liebl., *Q. robur* L. |
| | | *Cydia amplana* (HÜBNER, 1800) | *Castanea sativa* Mill. |
| | *Pyralidae* | *Alispa angustella* (HÜBNER, 1796) | *Euonymus europaeus* L. |
| | | *Dioryctria abietella* (DENIS & SCHIFFERMÜLLER, 1775) | *Pseudotsuga menziesii* (Mirbel) Franco |

Table 1. Continued.

| Order | Family | Species | Host plant |
|---|---|---|---|
| *Lepidoptera* | *Sphingidae* | *Sphinx ligustri* LINNAEUS, 1758 | *Ligustrum ovalifolium* Hassk. |
| | | *Lathoe populi* (LINNAEUS, 1758) | *Betula verrucosa* Ehrh. |
| | | *Sphinx pinastri* LINNAEUS, 1758 | *Pinus strobus* L. |
| | *Geometridae* | *Operophtera brumata* LINNAEUS, 1758 | *Carpinus betulus* L. |
| | | *Erannis defoliaria* (CLERCK, 1759) | *Fagus sylvatica* L. |
| | *Limantriidae* | *Lymantria dispar* LINNAEUS, 1759 | different species – polyphagous |
| | | *Orgyia antiqua* (LINNAEUS, 1758) | *Pinus sylvestris* L. |
| | | *Euproctis chrysorrhoea* LINNAEUS, 1758 | different species – polyphagous |
| | | *Dasychira pudibunda* (LINNAEUS, 1758) | *Juglans regia* L., *Betula verrucosa* Ehrh. |
| | | *Orgyia recens* (HÜBNER, 1819) | *Carpinus betulus* L. |
| | *Arctiidae* | *Hyphantria cunea* (DRURY, 1773) | *Negundo aceroides* Moench. |
| | *Libytheidae* | *Libythea celtis* (LAICHHARTIG, 1782) | *Celtis occidentalis* L. |
| | *Nepticulidae* | *Stigmella speciosa* (FREY, 1858) | *Acer platanoides* L., *A. pseudoplatanus* L., *A. campestre* L., *A. tataricum* L., *A. monspessulanum* L. |
| | | *Stigmella confusella* (WOOD & WALSINGHAM, 1894) | *Betula verrucosa* Ehrh., *B. pubescens* Ehrh. |
| | | *Stigmella microtheriella* STAINTON, 1854 | *Corylus colurna* L. |
| | | *Stigmella atricapitella* HAWORTH, 1828 | *Quercus cerris* L., *Q. robur* L., *Q. petraea* (Mattuschka) Liebl. |
| | | *Stigmella argentipedella* ZELLER, 1839 | *Betula verrucosa* Ehrh. |
| | | *Stigmella carpinella* HEINEMANN, 1862 | *Carpinus betulus* L. |
| | | *Stigmella hemargyrella* KOLLAR, 1832 | *Fagus sylvatica* L. |
| | | *Stigmella subtrimaculella* DUFRANE, 1949 | *Populus nigra* L., *P. simonii* Carr., *P. deltoides* Bartr. ex Marsh. |
| | | *Stigmella centifoliella* ZELLER, 1848 | *Rosa canina* L., *Rosa multiflora* Thunb. |
| | | *Stigmella ulmifoliae* HERING, 1931 | *Ulmus laevis* Pallas, *Ulmus glabra* Huds. |
| | | *Stigmella plagicolella* STAINTON, 1854 | *Prunus cerasifera* Ehrh., *Malus sp.* |
| | | *Stigmella tiliae* FREY, 1856 | *Tilia cordata* Mill., *T. platyphyllos* Scop. |

Table 1. Continued.

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|---|---|---|---|
| *Lepidoptera* | *Tischeriidae* | *Tischeria ekebladella* BJERKANDER, 1795 | *Quercus robur* L., *Q. cerris* L. |
| | | *Tischeria decidua* WOCKE, 1876 | *Quercus robur* L., *Q. petraea* (Mattuchka) Liebl., *Q. cerris* L. |
| *Sternorrhyncha* | *Psyllidae* | *Psyllopsis fraxini* (LINNAEUS, 1758) | *Fraxinus excelsior* L. |
| | | *Psylla buxi* (LINNAEUS, 1758) | *Buxus sempervirens* L. |
| | *Lachnidae* | *Lachnus roboris* LINNAEUS, 1758 | *Quercus robur* L., *Q. cerris* L. |
| | | *Cinara boerneri* ANNAND, 1928 | *Larix decidua* Mill. |
| | | *Cinara pini* (LINNAEUS, 1758) | *Pinus sylvestris* L., *Pinus nigra* Arnold. |
| | | *Schizolachnus pineti* (FABRICIUS, 1781) | *Pinus sylvestris* L., *Pinus nigra* Arnold. |
| | *Callaphididae* | *Drepanosiphon platanoides* (SCHRANK, 1801) | *Acer pseudoplatanus* L., *A. platanoides* L., *A. saccharinum* L. |
| | | *Phyllaphis fagi* (LINNAEUS, 1767) | *Fagus sylvatica* L. |
| | | *Callaphis juglandis* (GOEZE, 1778) | *Juglans regia* L. |
| | | *Eucaraphis punctipennis* (ZETTERSTEDT, 1828) | *Betula verrucosa* Ehrh. |
| | *Aphididae* | *Acyrthosiphon caraganae* (CHOLODKOVSKY., 1907) | *Caragana arborescens* Lamk. |
| | | *Aphis fabae* SCOPOLI, 1763 | *Philladelphus coronarius* L., *Euonymus europaeus* L. |
| | | *Aphis spiraephaga* MÜLLER, 1961 | *Spiraea x vanhouttei* (Briot) Carr. |
| | | *Aphis craccivora* KOCH, 1854 | *Robinia pseudoacacia* L. |
| | | *Aphis sambuci* LINNAEUS, 1758 | *Sambucus nigra* L. |
| | | *Aphis corniella* (HILLE RIS LAMBERS, 1935) | *Cornus alba* L., *Swida sanguinea* (L.) Opiz |
| | | *Aphis viburni* SCOPOLI, 1763 | *Viburnum rhytidophyllum* Hemsl., *V. lantana* L. |
| | | *Aphis ilicis* KALTENBACH, 1843 | *Ilex aquifolium* L. |
| | | *Aphis schneideri* (BÖMER, 1940) | *Ribes aureum* Pursh. |
| | | *Aphis farinosa* GMELIN, 1790 | *Salix alba* L. |
| | | *Myzus persicae* (SULZER, 1776) | *Hibiscus syriacus* L. |
| | | *Myzus cerasi* FABRICIUS, 1775 | *Prunus avium* L. |
| | | *Myzodes ligustri* KALTENBACH, 1841 | *Ligustrum vulgare* L. |

Table 1. Continued.

| Order | Family | Species | Host plant |
|---|---|---|---|
| *Sternorrhyncha* | *Aphididae* | *Prociphilus xylostei* DE GEER, 1773 | *Lonicera xylosteum* L. |
| | | *Periphyllus aceris* LINNAEUS, 1761 | *Acer campestre* L. |
| | | *Capitophorus elaeagni* (DEL GUERCIO, 1894) | *Eleagnus angustifolia* L. |
| | | *Yezabura crataegi* (KALTENBACH, 1843) | *Crataegus monogyna* Jacq. |
| | | *Liosomaphis abietina* (WALKER, 1849) | *Picea abies* (L.) Karst., *P. pungens* Engelm. |
| | *Pemphigidae* | *Pemphigus spirothecae* PASSERINI, 1860 | *Populus nigra* L. |
| | | *Schizoneura ulmi* (LINNAEUS, 1758) | *Ulmus laevis* Pallas, *Ulmus glabra* Huds. |
| | | *Pemphigus bursarius* (LINNAEUS, 1758) | *Populus nigra* L. |
| | *Adelgidae* | *Adelges laricis* VALLOT, 1836 | *Larix decidua* Mill., *Picea abies* (L.) Karst. |
| | | *Sacchiphantes viridis* (RATZEBURG, 1843) | *Picea sp..,Larix decidua* Mill. |
| | | *Pineus pini* (MAQUART, 1819) | *Pinus sylvestris* L. |
| | | *Pineus strobi* (HARTIG, 1837) | *Pinus strobus* L. |
| | | *Dreyfusia nordmannianae* ECKSTEIN, 1890 | *Abies alba* Mill. |
| | | *Gilleteella cooleyi* (GILLETTE, 1907) | *Pseudotsuga menziesii* (Mirbel) Franco |
| | | *Dreyfusia piceae* (RATZEBURG, 1844) | *Abies concolor* (Gord.) Engelm. |
| | *Phylloxeridae* | *Phylloxera coccinea* (von HEYDEN, 1837) | *Quercus robur* L., *Q. petraea* (Mattuschka) Liebl., *Q. cerris* L. |
| | *Coccidae* | *Physokermes piceae* (SCHRANK, 1801) | *Picea pungens* Engelm., *P. abies* (L.) Karst. |
| | | *Aspidiotus hederae* (VALLOT, 1829) | *Hedera helix* L. |
| | *Diaspididae* | *Carulaspis visci* (SCHRANK, 1781) | *Juniperus sp., Thuja occidentalis* L., *Thuja orientalis* L., *Chamaecyparis lawsoniana* (A. Murray) Parl. |
| | | *Leucaspis pini* (HARTIG, 1839) | *Pinus mugo* Turra., *P. nigra* Arnold, *P. sylvestris* L. |
| *Coleoptera* | *Lucanidae* | *Lucanus cervus* LINNAEUS, 1758 | *Quercus petraea* (Mattusch) Liebl. |
| | | *Dorcus parallelopipedus* (LINNAEUS, 1785) | *Populus alba* L. |
| | *Buprestidae* | *Trachys minutus* (LINNAEUS, 1758) | *Tilia platyphyllos* Scop. |
| | *Cerambycidae* | *Aromia moschata* (LINNAEUS, 1758) | *Salix alba* L. |

Table 1. Continued.

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|---|---|---|---|
| *Coleoptera* | *Cerambycidae* | *Rhagium inquisitor* (LINNAEUS, 1758) | *Picea abies* (L.) Karst. |
| | | *Megopis scabricornis* (SCOPOLI, 1763) | *Negundo aceroides* Moench. |
| | *Chrysomelidae* | *Cryptocephalus pini* LINNAEUS, 1758 | *Pinus sylvestris* L. |
| | | *Galerucella viburni* (PAYKULL, 1799) | *Viburnum opulus* L. |
| | | *Melasoma aenea* LINNAEUS, 1758 | *Populus nigra* L. |
| | | *Agelastica alni* LINNAEUS, 1758 | *Alnus glutinosa* (L.) |
| | *Alticidae* | *Altica quercetorum* FOUDRAS, 1860 | *Quercus robur* L.., *Q. cerris* L., *Fagus sylvatica* L. |
| | *Attelabidae* | *Deporaus tristis* (FABRICIUS, 1794) | *Acer platanoides* L. |
| | *Curculionidae* | *Curculio glandium* MARSHAM, 1802 | *Quercus robur* L., *Q. petraea* (Mattuschka) Liebl., *Q. cerris* L. |
| | | *Curculio nucum* LINNAEUS, 1758 | *Corylus colurna* L. |
| | | *Curculio elephas* (GYLLENHAL, 1836) | *Castanea sativa* Mill. |
| | | *Otiorrhynchus sulcatus* FABRICIUS, 1775 | *Laurocerasus officinalis* Roem, *Prunus sp.* |
| | | *Otiorrhynchus rotundatus* SIEBOLD, 1837 | *Lonicera pileata* Oliver, *L. nitida* Wils., *Syringa vulgaris* L., *Ligustrum vulgare* L., *L. ovalifoliumHassk.* |
| | | *Otiorrhynchus singularis* (LINNAEUS, 1767) | *Taxus baccata* L. |
| | | *Otiorhynchus lugdunensis* BOHEMAN, 1843 | *Forsythia x intermedia* Zab., *F. suspensa* (Thunb.) Vahl |
| | | *Rhynchaenus fagi* LINNAEUS, 1758 | *Fagus sylvatica* L. |
| | | *Rhynchaenus alni* LINNAEUS, 1758 | *Alnus glutinosa* (L.) |
| | | *Cionus fraxini* DEGEER, 1775 | *Fraxinus excelsior* L. |
| | | *Phyllobius oblongus* (LINNAEUS, 1758) | *Acer platanoides* L. |
| | | *Phyllobius arborator* (HERBST, 1797) | *Acer platanoides* L., *Acer saccharinum* L. |
| | | *Phyllobius argentatus* (LINNAEUS, 1758) | *Prunus cerasifera* Ehrh., *Betula pubescens* Ehrh. |
| *Hymenoptera* | *Tenthredinidae* | *Periclista lineolata* KLUG, 1814 | *Quercus robur* L., *Q. petraea* (Mattuschka) Liebl. |
| | | *Emphytus cinctus* LINNAEUS, 1758 | *Rosa canina* L. |
| | | *Blennocampa pusilla* KLUG, 1985 | *Rosa canina* L. |
| | | *Eriocampa juglandis* FITCH, 1857 | *Alnus glutinosa* (L.) |

Table 1. Continued.

| Order | Family | Species | Host plant |
|---|---|---|---|
| *Hymenoptera* | *Tenthredinidae* | *Pteronidea salicis* LINNAEUS, 1758 | *Salix alba* L., *S. viminalis* L. |
| | | *Caliroa annulipes* (KLUG, 1814) | *Tilia platyphyllos* Scop., *T. cordata* Mill.., *Quercus petraea* (Mattuschka) Liebl. |
| | | *Croesus septentrionalis* (LINNAEUS, 1758) | *Betula verrucosa* Ehrh. |
| | | *Trichiocampus viminalis* (Fallén, 1808) | *Populus nigra* L. |
| | | *Pontania proxima* (LEPELETIER, 1823) | *Salix alba* L. |
| | | *Pontania vesicator* BREMI, 1849 | *Salix alba* L. |
| | | *Pristiphora abietina* (CHRIST, 1971) | *Picea pungens* Engelm. |
| | | *Scolioneura betulae* (ZADDACH, 1858) | *Betula verrucosa* Ehrh. |
| | | *Hemichroa crocea* GEOFFROY, 1785 | *Alnus glutinosa* (L.) |
| | *Eurytomidae* | *Bruchophagus sophorae* (CROSBY & CROSBY, 1929) | *Sophora japonica* L. |
| | *Cynipidae* | *Cynips quercus-calicis* (BURGSDORFF, 1783) | *Quercus robur* L., *Q. cerris* L. |
| | | *Cynips quercus-folii* LINNAEUS, 1758 | *Quercus robur* L. |
| | | *Cynips caput-medusae* (HARTIG, 1843) | *Quercus petraea* (Mattuschka) Liebl. |
| | | *Cynips hungarica* HARTIG, 1843 | *Quercus robur* L. |
| | | *Cynips divisa* HARTIG, 1840 | *Quercus robur* L., *Q. petraea* (Mattuschka) Liebl. |
| | | *Cynips longiventris* HARTIG, 1840 | *Quercus robur* L., *Q. petraea* (Mattuschka) Liebl. |
| | | *Cynips glutinosa* GIRAUD, 1859 | *Quercus cerris* L., *Q. robur* L. |
| | | *Trigonaspis megaptera* (PANZER, 1801) | *Quercus cerris* L., *Q. robur* L. |
| | | *Andricus inflator* HARTIG, 1840 | *Quercus robur* L. |
| | | *Andricus curvator* (HARTIG, 1840) | *Quercus robur* L. |
| | | *Neuroterus numismalis* (GEOFFROY, 1785) | *Quercus robur* L. |
| | | *Neuroterus lanuginosus* (GIRAUD, 1859) | *Quercus cerris* L. |
| | | *Neuroterus quercus-baccarum* (LINNAEUS, 1758) | *Quercus robur* L., *Q. petraea* (Mattuschka) Liebl. |
| | | *Biorrhiza pallida* (OLIVIER, 1791) | *Quercus robur* L. |

Table 1. Continued.

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|---|---|---|---|
| *Hymenoptera* | *Cynipidae* | *Diplolepis rosae* (LINNAEUS, 1758) | *Rosa canina* L. |
| | *Argidae* | *Arge berberidis* (KLUG, 1812) | *Berberis thunbergii* DC. |
| *Diptera* | *Cecidomyiidae* | *Craneiobia corni* GIRAUD, 1863 | *Swida sanguinea* (L.) Opiz |
| | | *Dasyneura fraxini* (KIEFFER, 1896) | *Fraxinus excelsior L., Fraxinus ornus* L. |
| | | *Drisina glutinisa* (GIARD, 1893) | *Acer pseudoplatanus* L. |
| | | *Dasyneura tiliamvolvens* RÜBSAAMEN, 1889 | *Tilia platyphyllos* Scop., *T. cordata* Mill. |
| | | *Dasyneura acercrispans* (KIEFFER, 1888) | *Acer campestre* L. |
| | | *Dasyneura gleditchiae* (OSTEN SACKEN, 1866) | *Gleditsia triacanthos* L. |
| | | *Dryomyia circinnans* (GIRAUD, 1861) | *Quercus cerris* L. |
| | | *Thecodiplosis brachyntera* (SCHWÄGRICHEN, 1835) | *Pinus sylvestris* L. |
| | | *Oligotrophus juniperinus* (LINNAEUS, 1758) | *Juniperus communis* L. |
| | | *Taxomyia taxi* (INCHBALD, 1861) | *Taxus baccata* L. |
| | | *Zygiobia carpini* (F. LOEW, 1874) | *Carpinus betulus* L. |
| | | *Macrodiplosis dryobia* (F. LOEW, 1877) | *Quercus robur* L., *Q. petraea* (Mattusch.) Liebl. |
| | | *Didimomyia reaumuriana* (F. LOEW, 1877) | *Tilia platyphyllos* Scop., *T. cordata* Mill. |
| | | *Contarinia tiliarum* KIEFFER, 1890 | *Tilia platyphyllos* Scop. |
| | | *Monarthropalpus buxi* (LABOULBÈNE, 1873) | *Buxus sempervirens* L. |
| | | *Rhabdophaga rosaria* (LOEW, 1850) | *Salix alba* L. |
| | *Trypetidae* | *Rhagoletis cerasi* (LINNAEUS, 1758) | *Prunus sp., Cotoneaster sp.* |
| | | *Rhagoletis alternata* FALLÉN, 1814 | *Rosa canina* L., *R. rugosa* Thunb. |
| | | *Rhagoletis meigenii* LOEW, 1844 | *Berberis vulgaris* L., *B. thunbergii* DC. |
| | | *Suillia oldenbergi* CZERNY, 1904 | *Sambucus nigra* L. |
| | *Agromyzidae* | *Liriomyza amoena* (MEIGEN, 1830) | *Sambucus nigra* L. |
| | | *Agromyza albitarsis* MEIGEN, 1830 | *Populus tremula* L. |
| | | *Agromyza alnibetulae* HENDEL, 1931 | *Alnus glutinosa* (L.) |

Table 1. Continued.

| Order | Family | Species | Host plant |
|---|---|---|---|
| *Diptera* | *Agromyzidae* | *Phytomyza xylostei* (ROBINEAU – DESVOIDY, 1851) | *Lonicera xylosteum* L., *L. tatarica* L. |
| | | *Phytomyza agromyzina* MEIGEN, 1830 | *Cornus alba* L., *Swida sanguinea* (L.) Opiz., *Cornus mas* L. |
| | | *Phytomyza atricornis* MEIGEN, 1838 | *Laburnum anagyroides* Med. |
| | *Anthomyiidae* | *Hylemyia laricicola* (KARL, 1928) | *Larix decidua* Mill. |
| | | *Hylemyia anthracina* (CZERNY 1906) | *Picea pungens* Engelm. |
| *Hemiptera* | *Tingidae* | *Corythucha ciliata* (SAY, 1838) | *Platanus occidentalis* L., *P. orientalis* L., *P. x acerifolia* (Ait.) Willd. |
| | *Pentatomidae* | *Palomena viridissima* (PODA, 1761) | *Acer platanoides* L. |
| | *Acanthosomidae* | *Acanthosoma haemorrhoidale* (LINNAEUS, 1758) | *Crataegus crus-galli* L., *Buddleia davidii* Franch. |

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# ШТЕТНА ЕНТОМОФАУНА ШУМСКИХ БИЉАКА У СЛОВАЧКОЈ

J. Колар

## И З В О Д

У периоду од 2003-2006. у околини града Нитра (Република Словачка) истраживана је штетна ентомофауна. Истраживања су базирана на шумским биљкама, које расту у урбаном окружењу. У току теренских истраживања уочена је повећана бројност интродукованих врста. То су врсте које углавном припадају редовима Lepidoptera: *Cameraria ohridella* (Deschka & Dimić, 1986), *Phyllonorycter platani* (Staudinger, 1870) и Hymenoptera: *Bruchophagus sophorae* (Crosby & Crosby, 1929). Укупно је проучено 19 интродукованих врста. На неким локалитетима уочена је повећана бројност врсте *Dasyneura gleditchiae* (Osten Sacken). У току 2005. запажена су оштећења на биљкама проузрокована повећаном бројности врста *Lymantria dispar* Linnaeus и *Euproctis chrysorrhoea* Linnaeus.

Наш закључак је да и даље посебна пажњу треба обратити на интродуковане врсте, сталном контролом и мапирањем, као и бољом међународном сарадњом, како би њихова бројност била под сталном контролом.

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