

On the history of research on orthopterous insects (Orthoptera) in Slovakia from 1800 – 1918

Ivan Országh & Peter Fedor

Zusammenfassung

Der vorliegende Artikel beschreibt die Geschichte der Orthopteren-Forschung in der Slowakischen Republik von 1800 bis 1918. Die regionalen Kenntnisse über diese Insektengruppe wurden insbesondere durch die folgenden Forscher erarbeitet: F. Ocskay (1775–1851), J. Frivaldszky (1822–1895), G. Pungur (1843–1907), K. Chyzer (1836–1909). Die Verfasser korrigieren außerdem die Angabe über das Erscheinungsdatum der Monographie von Frivaldszky: Diese wurde 1868 publiziert und nicht, wie irrtümlich angenommen, 1867.

Abstract

This paper presents a view on the development of research on the orthopterous insects of Slovakia in the period between 1800 and 1918. The knowledge was particularly enhanced by baron F. Ocskay (1775–1851), J. Frivaldszky (1822–1895), G. Pungur (1843–1907), K. Chyzer (1836–1909), etc. The authors reveal an incorrect year of publishing of the Frivaldszky's monograph, issued in 1868 instead of 1867.

The oldest period

The oldest knowledge on orthopterous insects (Orthoptera) dates back to the 15th century and usually includes notes on invasive locusts as serious pests of diverse growing crop in this area. In fact there is plenty of information on their occurrence in Slovakia in past centuries as shown in several chronicles and manuscripts, for instance the data on invasions from the Great Danube basin towards the surroundings of Kežmarok (1545, 1546), Banská Bystrica (1546, 1547), Levoča (1474, 1546, 1660), Nitra (1617), Spišská Nová Ves (1662), Prešov (1690), Sobrance (1692), Pozdišovce (1692) etc. The other regions in western Slovakia, e.g. the Bratislava region (1784), Žitný ostrov (1784), Bratislava (1799) as well as in E Slovakia – Bardejov (1782), Gemer region (1782), Rožňava (1783), Kečov (1783) etc. suffered from the invasions in the 18th century. A detailed survey on locust invasions at various sites in Slovakia was presented by RÉTHLY (1962, 1970). PUNGUR (1899) recorded massive historical invasions from the east and southeast towards the area of the Great Danube basin in the introduction chapter of his "Fauna Regni Hungariae". An interesting headline on the locust invasions in Transylvania towards the west from the end of the 18th century was presented by "Magyar Hírmondó", a Bratislava magazine (ANONYMUS 1790).

The 19th century

The first list of the orthopterous insects in former Hungary¹, of which Slovakia was a part of till 1918, was published by KOY (1800). This is a simple list of names without relevant collection sites and dates and includes 16 species (names are presented originally): *Acheta Campestris*, *A. Domestica*, *A. Gryllotalpa*, *A. Maura*, *A. Italica*, *A. Variegata*; *Acridium Bipunctatum*, *Ac. Subulatum*; *Gryllus Coerulescens*, *G. Rex*, *G. Stridulus*; *Locusta Epphippiger*, *L. Migratoria*, *L. Serrata*, *L. Varia*, *L. Viridissima*. Later the list was republished by HANÁK in 1849 (Orthoptera pp. 109-110) in his book on the history of Hungarian zoology until the end of the 19th century.

The start of the study on orthopterous insects in Slovakia can be attributed to RUMI (1807), who presented 7 species (*Gryllus Gryllotalpa* – zemský rak, obluda; *G. domesticus* – swrcek; *G. campestris*; *G. viridissimus*; *G. verrucivorus*; *G. migratorius* – kobilka, konjik; *G. stridulus*) from the surroundings of Spišská Nová Ves (= Igló). This work has been valuable from both the entomological point of view as well as a contribution to insect nomenclature as it has presented several interesting Slovakian names of orthopterans. The works written by OCSKAY (1826, 1832), who described some new Orthoptera taxa from the area of Hungary, belong among the oldest studies on this matter. In 1826 the author contributed to the knowledge on *Gryllus crassipes* [= *Stenobothrus crassipes* (Charpentier, 1825)] and described *Gryllus brachypterus* [= *Euthystira brachyptera* (Ocskay, 1826)] as a new species. Both of them occur also in Slovakia. The work from 1832 includes descriptions of 3 species: *Acheta dalmatina* [= *Gryllomorpha dalmatina* (Ocskay, 1832)], *Gryllus Genèi* [= *Dociostaurus (Kazakia) genei* (Ocskay, 1832)] and *Gryllus platypterus* [= *Chrysochraon platypterus* (Ocskay, 1832) nom. dub.]. The third mentioned species was recorded in the Nitra region (Ocskay 1832, p. 960).

The second half of the 19th century showed an increasing number of published works and their authors, who were exclusively dedicated to orthopterans or together with other insect groups. In this period the first monograph on the orthopterans of Hungary appeared, written by J. FRIVALDSZKY. Its general part includes chapters on morphology, economical importance and a survey of literature sources dealing with the orthopterans of Hungary. The systematic chapter, presented on pages 64-192, contains identification keys and a survey of 102 species. Of 39 species localities from Slovakia are mentioned, the most frequent are Bratislava, Nitra, Trenčín, Zvolen, Liptov region, Gemer region, etc. Six orthopterans were described as new species:

Odontura affinis = *Poecilimon affinis* (Frivaldszky, 1868),
Odontura Brunneri = *Poecilimon brunneri* (Frivaldszky, 1868),
Odontura modesta = *Isophya modesta* (Frivaldszky, 1868),
Odontura speciosa = *Isophya speciosa* (Frivaldszky, 1868),
Odontura laticauda = *Leptophyes laticauda* (Frivaldszky, 1868),
Odontura discoidalis = *Leptophyes discoidalis* (Frivaldszky, 1868).

Only one of them, *Leptophyes discoidalis*, occurs in Slovakia. However a record of *Leptophyes laticauda*, presented by PETROGALLI (1890) and PETRICSKÓ (1892) from several localities in central Slovakia most probably refers to a wrong identification as the nearest occurrence of the species has been mentioned from Croatia and Slovenia (Dr. Holuša, Dr. Kočárek, pers. comm.).

We propose to correct a traditionally published mistake, concerning FRIVALDSZKY's monograph "Monographia Orthopterorum Hungariae" specifically the publication year. In fact the monograph was issued in 1868 and the year 1867, as commonly cited, is incorrect. Despite the year 1867 has been printed on the title page, the cover page as well as the figure tables I–VII (right below) carry a distinct year 1868. We can assume that the book had been typed and printed in 1867. However it has been finalised and distributed a year later (1868). In accordance with 'range of dates' ["If the date of publication specified in a work is a range of dates, the work is to be dated from the final day of the range" (Article 21.6. ICZN, 4th Ed., 1999, p. 23)], the year 1868 has to be considered as the valid date. Hence the species described in the monograph as new for science should be dated by 1868 instead of 1867. For instance the "Check-list of Blattaria, Mantodea, Orthoptera and Dermaptera of the Czech and Slovak Republics" (KOČÁREK et al. 1999) has to include *Leptophyes discoidalis* (Frivaldszky, 1868).

In March 1869, shortly after, KRAATZ, a reputable German entomologist, informed on the monograph by FRIVALDSZKY in the famous journal "Berliner Entomologische Zeitschrift". KRAATZ mentioned the correct year of publishing (1868) and felt sorry about the fact, that the used language wasn't accessible for German entomologists. HORVÁTH (1870) probably dated the monograph as 1867 for the first time and since then this was followed on a broad scale. HORVÁTH also published the more extensive paper with the original descriptions of FRIVALDSZKY's new taxa in their Latin version.

As a rare exception in this period HERMAN in his study on the earwigs and orthopterans of Transylvania (1871, p. 31, 43) dated the monograph correctly as 1868. Unfortunately, during the following years the monograph was usually cited as 1867, particularly since the catalogue work on the orthopterans of Hungary (PUNGUR 1899) in the compendium "Fauna Regni Hungariae" the monograph by FRIVALDSZKY cited 1867.

Moreover we would like to state that the author's surname has to be written in its correct version as "FRIVALDSZKY" instead of "FRIVALDSKY". In such an inexact version it has appeared in many entomological papers.

An interesting fact refers to a modification of the name FRIVALDSZKY → FRIVALDSZKY, used by HERMAN (1871) to name the species *Thamnotrizon Friwaldszkyi* [= *Pholidoptera friwaldszkyi* (Hermann, 1871)], described from Transylvania. Soon, in 1899, PUNGUR has corrected the specific name (w → v) into its final version *Thamnotrizon Friwaldszkyi*. The paper by KOČÁREK et al. (1999), as well as a lot of other works, have presented the species as *Pholidoptera frivaldszkyi* (Herman, 1871). Hence the specific name in its binomen *Pholidoptera frivaldszkyi* needs to be revised as this is an incorrect subsequent spelling of a name (Article 33.3. ICZN, pp. 42-43). An intended change of a specific name would refer to an

¹ The presented term "Hungary" refers to the former Great Hungary (in Slovak "Uhorsko"), which has lost its validity by 1918. Great Hungary was a part of Austro-Hungarian empire.

unjustified emendation (Article 19.1. ICZN, p. 21). The correct original spelling of the species name sounds as *Pholidoptera friwaldszkyi* (Herman, 1871). In the Czechoslovak literature OBENBERGER (1926) amazingly used the correct version of the name. However his only mistake was to change an order in letters 'sz' onto 'zs' in the specific name.

MOCSÁRY, a famous entomologist, contributed to the knowledge on orthopterous insects in Zemplín, Zvolen and Liptov regions in his works from 1875 and 1878. Numerous species have been repeatedly accompanied by their localities in Slovakia - Vihorlatské vrchy Mts., Humenné, Sobrance, Korytnica, Sliač, Banská Bystrica, etc. The paper on the insects of Východné Karpaty Mts. including several orthopteran species, were issued by BIRÓ (1885).

Another monograph on orthopterans appeared in the Hungarian entomological literature at the beginning of the 1890's. This was the book by PUNGUR (1891) dealing with the superfamilies of Grylloidea and Tridactyloidea. For some species concrete records of Slovakian localities are given. The monograph presents detailed data on morphology, biology, ontogenesis and overwintering of the studied taxa. The author considered the first pair of wings as a musical instrument and he even presented some note records of crickets. The monograph is also accessible for foreign experts as the general parts were written in French too.

Soon after PUNGUR (1899) published his second rather synthetic study on orthopterans under the patronage of "Fauna Regni Hungariae". The first part of the study includes a detailed survey on the historical background of orthopterological research in Hungary together with 122 references on literature published before 1899. In the systematic chapter the orthopterans were represented by the families of Acrididae, Locustidae and Gryllidae, 56 genera and 150 species. For most species localities are presented from relevant geographical regions (numbered as Roman I–VIII) in accordance with the classification of former Hungaria. The area of Slovakia was situated in 3 of them – III, IV and partially II.

CHYZER, who had a general knowledge in zoology, gave also attention to orthopterans. In 1897 he published the list of species recorded in the Zemplín region. This was actually a faunistic work with a survey of species and their localities. In fact there were several similar regional studies published at the end of the 19th and beginning of the 20th century. OLASZ (1906) wrote a rather extensive contribution, which presented 48 species, usually with localities from W, N and E Slovakia. A year later he published the list of insects from the surroundings of Babia hora and Oravská Polhora in co authorship (OLASZ & KISS 1907), including 10 orthopteran species. At the beginning of the 20th century CSIKI (1905) published his valuable work on the myrmecophilous cricket *Myrmecophilus acervorum* from the surroundings of Rimavská Sobota. In 1914 at the beginning of World War I EBNER (1914) issued a valuable study on more than 30 orthopteran species, which were collected in July 1910 from N and NE Slovakia, from the localities of Tatry Mts., Kežmarok, Dobšiná, Kraľovany, Stratená (Slovenský raj). In August 1910 he collected orthopterans on the W side of Malé Karpaty Mts. close to Kuchyňa. OBENBERGER (1926) in his monograph on the orthopterans of Czechoslovakia used this work as reference on the distribution of many species in Slovakia.

Apart from the works which focussed on orthopterans, there were several broader studies in journals or books, which included information on orthopterans. Good examples are the work by PETROGALLI (1890) on the animals in the surroundings of Sitno (Orthoptera p. 141), MALESEVICS (1892) on the fauna of Lučenec and surroundings (Orthoptera p. 25-26); the book on the fauna of Banská Štiavnica (Orthoptera p. 39-40) written by PETRICSKÓ (1892) and a more than 600 page compilation work by ORTVAY (1902) on the fauna of Bratislava and its wide surroundings (Orthoptera p. 377-389). All these works have a place in the history of the study on the orthopterans of Slovakia, which should also include some more general works (FISCHER 1853, BRUNNER VON WATTENWYL 1878, 1882, REDTENBACHER 1900, etc.), which deal with orthopterans from the whole of Europe or from the area of the former Austro-Hungarian empire.

The progress in knowledge on orthopterous insects was interrupted in the second decade of the 20th century due to the political and economic split of Austro-Hungarian empire (1918) and the establishment of the new state units in Central Europe.

Acknowledgements

The authors are grateful to RNDr. Ľ. VIDLIČKA (Institute of Zoology SAS, Bratislava, Slovakia) and Mgr. P. MIKLÓS (Department of Zoology, Comenius University, Bratislava, Slovakia) for their help to analyse the history of orthopterological research in Slovakia and to Prof. I. SPELLERBERG (Lincoln University, New Zealand) for his help with some English terms.

Author's address:
Prof. Ivan Országh
Department of Zoology
Comenius University
Mlynská dolina B-I
SK-842 15 Bratislava; Slovakia
E-Mail: orszaghova@fns.uniba.sk

Dr. Peter Fedor
Department of Ecosozology
Comenius University
Mlynská dolina B-2
SK-842 15 Bratislava; Slovakia
E-Mail: fedor@fns.uniba.sk

References

- ANONYMUS (1790): A sáskákrol újlag... [Once more on invasive locusts...]. – A Magyar Hírmondó, Posen (= Bratislava) 73dik Levele: 595-596 [In Hungarian].
- BIRÓ, L. (1885): Die charakteristischen Insekten im Gebirge der Ost-Karpathen. – Jahrbuch des Ungarischen Karpathenvereins, Igló (= Spišská Nová Ves) 12: 174-183.

- BRUNNER von WATTENWYL, C. (1878): Monographie der Phaneropteriden. – Herausgegeben von der K. K. Zoologisch-Botanischen Gesellschaft in Wien. Leipzig, 401 pp. + 7 Taf.
- BRUNNER von WATTENWYL, C. (1882): Prodomus der europäischen Orthopteren. – Verlag von Wilhelm Engelmann. Leipzig, 466 pp. + 11 Taf. + 1 Karte.
- CHYZER, K. (1897): Zemplénnvármegye Orthopterái [Orthoptera of the Zemplin region]. – Rovartani Lapok, Budapest 4: 99-101. [In Hungarian].
- CSIKI, E. (1905): Adatok a hangyásztücsök (*Myrmecophila acervorum* Panz.) ismeretéhez [A contribution to the knowledge on the cricket *Myrmecophila acervorum* Panz.]. – Állattani Közlemények, Budapest 4: 97-100 + Tab. [In Hungarian].
- EBNER, R. (1914): Beiträge zur Kenntnis der Orthopteren-Fauna von Oesterreich-Ungarn. (Schluss.). – Internationale Entomologische Zeitschrift, Guben 7: 309-312.
- FISCHER, L. H. (1853): Orthoptera europaea. – Lipsiae Guil. Engelmann, Parisiis Frider. Klincksieck, Londini Williams et Norgate, 454 pp. + 18 Tab.
- FRIVALDSZKY, J. (1868): A Magyarországi egyenesröpűek magánrajza. (Monographia Orthopterorum Hungariae.). – Értekezések a természettudományi osztály köréből. 12. szám. Kiadja a Magyar tudományos akadémia. Pest, 201 pp. + 7 Tab. [In Hungarian and Latin].
- HANÁK, J. (1849): Az állattan története és irodalma Magyarországon [History and literature of zoology in Hungary]. – Kiadta Pólya József. Pest, 220 pp. [In Hungarian].
- HERMAN, C.O. (1871): Die Dermapteren und Orthopteren Siebenbürgens. – Verhandlungen und Mitteilungen des Siebenbürgischen Vereines für Naturwissenschaften, Hermanstadt (= Sibiu) 21: 30-43 + Taf.
- HORVÁTH, G. (1870): Ueber die in v. Frivaldszky's "Monographia Orthopterorum Hungariae" beschriebenen neuen Arten. – Berliner Entomologische Zeitschrift 14: 41-46.
- International Commission on Zoological Nomenclature (1999): International Code of Zoological Nomenclature. – Fourth Edition. The International Trust of Zoological Nomenclature. London, XXIX + 306 pp.
- KISS, J. & OLASZ, K. (1907): Adatok Árva-Polhora és Babiagura rovarfaunájához. [Notes on the insect fauna of Oravská Polhora and Babiagóra]. – Rovartani Lapok, Budapest 14: 71-76. [In Hungarian].
- KOČÁREK, P., HOLUŠA, J. & VIDLIČKA, L. (1999): Check-list of Blattaria, Mantodea, Orthoptera and Dermaptera of the Czech and Slovak Republics. – Articulata 14: 177-184.
- KOY, T. (1800): Alphabetisches Verzeichnis meiner Insecten-Sammlung. Gewidmet Seinen Entomologischen Freuden von Tobias Koy. Ofen (= Buda), 64 pp.
- KRAATZ, G. (1869): Monographia Orthopterorum Hungariae cum VII tab. Székfoglaló Értekezés Frivaldszky János, Leveletző Tagtól. Pest 1868. – Berliner Entomologische Zeitschrift 12(1868): 422.
- MALESEVIC, E. (1892): Losoncz faunája vagyis az 1876. év őszétől, az 1891. év végeig talált és meghatározott állatfajok rendszeres felsorolása és a fauna jellemzése [A systematic survey of animal species found and determined from autumn 1876 to the end of 1891 and a sketch of the fauna in Lučenec]. – A Losonci Magyar Kir. Állami Főgymnasium Értesítője 1891-92: 3-47. [In Hungarian].
- MOCSÁRY, S. (1875): Adatok Zemplén és Ung megyék faunájához [Notes on the fauna of Zemplin and Užhorod regions]. – Matematikai és Természettudományi Közlemények 13 (1877): 131-185. [In Hungarian].
- MOCSÁRY, S. (1878): Adatok Zólyom és Liptó megyék faunájához [Notes on the fauna of Zvolen and Liptov regions]. – Matematikai és Természettudományi Közlemények 15: 223-263. [In Hungarian].
- NAGY, B. (2003): A revised check-list of Orthoptera-species of Hungary supplemented by Hungarian names of grasshopper species. – Folia Entomologica Hungarica 64: 85-94.
- OBERBERGER, J. (1926): Rovnokřidly hmyz (Orthoptera a Dermaptera) Republiky Československé [Orthopterous insects (Orthoptera and Dermaptera) of the Czechoslovak Republic]. – Nákladem České akademie věd a umění. Praha, 234 pp. + 4 Tab. [In Czech].
- OCSKAY, F. (1826): Gryllorum Hungariae indigenorum species aliquot. – Nova Acta Physico-Medica Academiae Caesareae Leopoldino-Carolinae Naturae Curiosorum 13 (Pars I.): 407-410.
- OCSKAY, F. (1832): Orthoptera nova. – Nova Acta Physico-Medica Academiae Caesareae Leopoldino-Carolinae Naturae Curiosorum 16 (Pars II.): 959-962.
- OLASZ, K. (1906): Adalék Magyarország Orthoptera- és Neuroptera-faunájához [A contribution to the fauna of Orthoptera and Neuroptera in Hungary]. – Rovartani Lapok, Budapest 13: 194-196. [In Hungarian].
- ORTVAY, T. (1902): Pozsonyvármegye és a területén fekvő Pozsony, Nagyszombat, Bazin, Modor s Szentgyörgy városok állatvilága [Fauna of the Bratislava region and its corresponding towns: Bratislava, Trnava, Pezinok, Modra and Svätý Jur]. – Kiadja Pozsonyváros anyagi hozzájárulásával. Pozsony (= Bratislava), 647 pp. [In Hungarian].
- OTTE, D., EADES, D.C. & NASKRECKI, P.: Orthoptera Species File Online (Version 2.2). – <http://osf2x.orthoptera.org/OSF2.2/OSF2X2Frameset.htm>
- PETRICSKÓ, J. (1892): Selmeczbánya vidéke állattani tekintetben [Fauna of Banská Štiavnica and its environs]. – Kiadja saját költségén a selmeczbányai gyógyászati és természet-tudományi egyesület. Selmeczbánya (= Banská Štiavnica), 133 pp. [In Hungarian].
- PETROGALLI, A. (1890): Kirándulás a Szitnyára [Excursion to Sitno Mt.]. – Jahresheft des Naturwissenschaftlichen Vereines des Trencséner Comitatus 11-12 (1888-1889): 132-146. [In Hungarian].
- PUNGUR, J. (1891): A Magyarországi tücsökfélék természetrajza. (Histoire naturelle des Gryllides de Hongrie.). – A K. M. Természettudományi Társulat. Budapest, 79 pp. + I.-VI. Tab. [In Hungarian and French].
- PUNGUR, J. (1899): Classis. Insecta. Ordo. Orthoptera. Fauna Regni Hungariae. A Magyar birodalom állatvilága. – A K. M. Természettudományi Társulat. Budapest, 16 pp. [In Hungarian and Latin].
- REDTENBACHER, J. (1900): Die Dermapteren und Orthopteren (Ohrwürmer und Geradflügler) von Österreich-Ungarn und Deutschland. – Verlag von C. Gerolds Sohn. Wien, 148 pp. + 1 Taf.
- RÉTHLY, A. (1962): Időjárási események és elemi csapások Magyarországon 1700-ig [Meteorological factors and elementary disasters in Hungary till 1700]. – Akadémiai Kiadó. Budapest, 452 pp. [In Hungarian].
- RÉTHLY, A. (1970): Időjárási események és elemi csapások Magyarországon 1701 – 1800-ig [Meteorological factors and elementary disasters in Hungary in the period of 1701 – 1800]. – Akadémiai Kiadó. Budapest, 624 pp. [In Hungarian].
- RUMI, C.G. (1807): Fortsetzung des Versuches einer Igloer entomographischen Fauna. – In: BREDETZKY, S.: Neue Beyträge zur Topographie und Statistik des Königreichs Ungarn. – Geistering. Wien und Triest: 334-352.